

MONOBLOCK  
DIRECTIONAL CONTROL VALVE

SDM140



 **walvoil**  
HYDRAULIC CONTROL SYSTEMS

# SDM140

## Features

Simple, compact and heavy duty designed monoblock valves from 1 to 6 sections for open and closed centre hydraulic systems.

H Fitted with a direct or pilot operated main pressure relief valve.

H Each spool has independent load check valve.

H Parallel circuit.

H Optional carry-over port.

H Diameter 18 mm - 0.71 in interchangeable spools.

H A wide variety of service port valves.

H Available manual, pneumatic, electro-pneumatic, hydraulic, electro-hydraulic and remote with flexible cables spool control kits.

### Additional information

This catalogue shows the product in the most standard configurations.

Please contact Customer Service Dpt. for more detailed information or special request.

### WARNING!

All specifications of this catalogue refer to the standard product at this date.

Walvoil, oriented to a continuous improvement, reserves the right to discontinue, modify or revise the specifications, without notice.

WALVOIL IS NOT RESPONSIBLE FOR ANY DAMAGE CAUSED BY AN  
INCORRECT USE OF THE PRODUCT.

7<sup>th</sup> edition February 2001:

**This edition supercedes all prior documents.**

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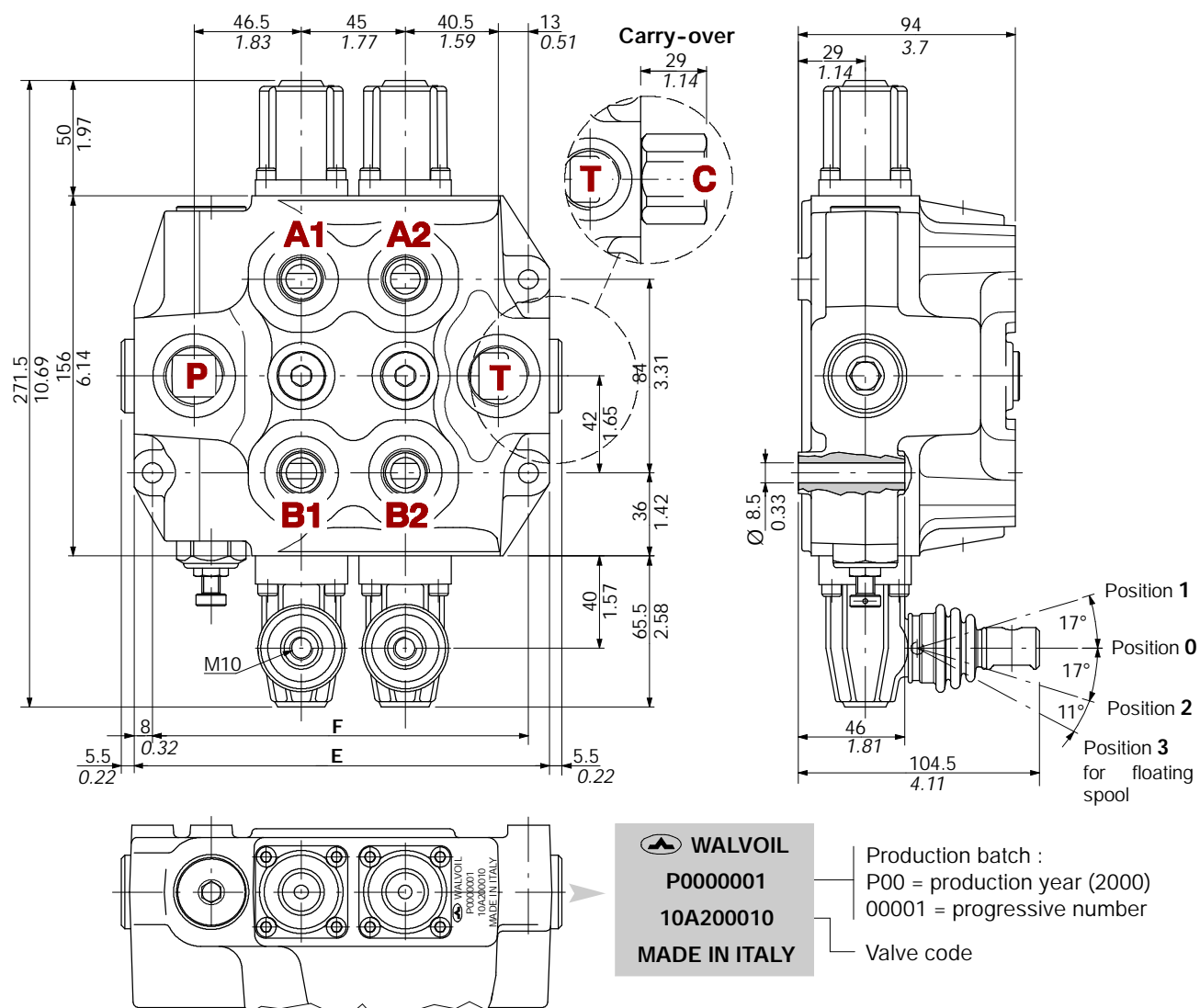
# SDM140

## Working conditions

This catalogue shows technical specifications and diagrams measured with mineral oil of 46 mm<sup>2</sup>/s - 46 cSt viscosity at 40°C temperature.

Nominal flow rating		80 l/min	
Operating pressure (maximum)		315 bar	4600 psi
Max. back pressure	<i>on outlet port T</i>	25 bar	360 psi
Internal leakage A(B)→T	<i>Δp=100 bar - 1450 psi fluid and valve at 40°C</i>	3 cm <sup>3</sup> /min	0.18 in <sup>3</sup> /min
Hydraulic fluid		Mineral base oil	
Fluid temperature	<i>with NBR seals</i>	from -20° to 80°C	
	<i>with FPM (VITON) seals</i>	from -20° to 100°C	
Viscosity	<i>operating range</i>	from 15 to 75 mm <sup>2</sup> /s	<i>from 15 to 75 cSt</i>
	<i>min</i>	12 mm <sup>2</sup> /s	12 cSt
	<i>max</i>	400 mm <sup>2</sup> /s	400 cSt
Max level of contamination		19/16 - ISO 4406	
Ambient temperature		from -40° to 60°C	

NOTE - For different conditions please contact Customer Service.



TYPE	E		F		Weight	
	mm	in	mm	in	kg	lb
SDM140/1-P	135	5.32	118	4.65	9.3	20.5
SDM140/2-P	180	7.09	163	6.42	13.4	29.5
SDM140/3-P	225	8.86	208	8.19	16.6	36.6

TYPE	E		F		Weight	
	mm	in	mm	in	kg	lb
SDM140/4-P	270	10.63	253	9.96	20.8	45.9
SDM140/5-P	315	12.40	298	11.73	24	52.9
SDM140/6-P	360	14.17	343	13.50	27.3	60.2

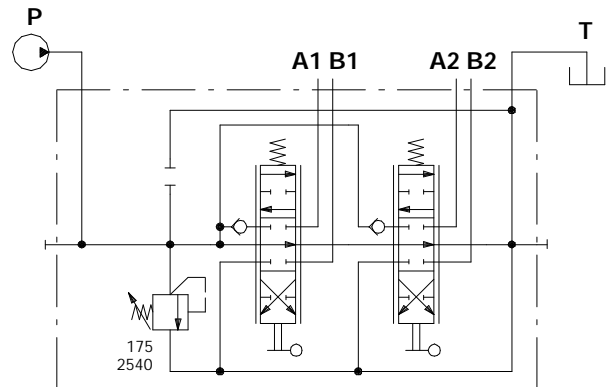
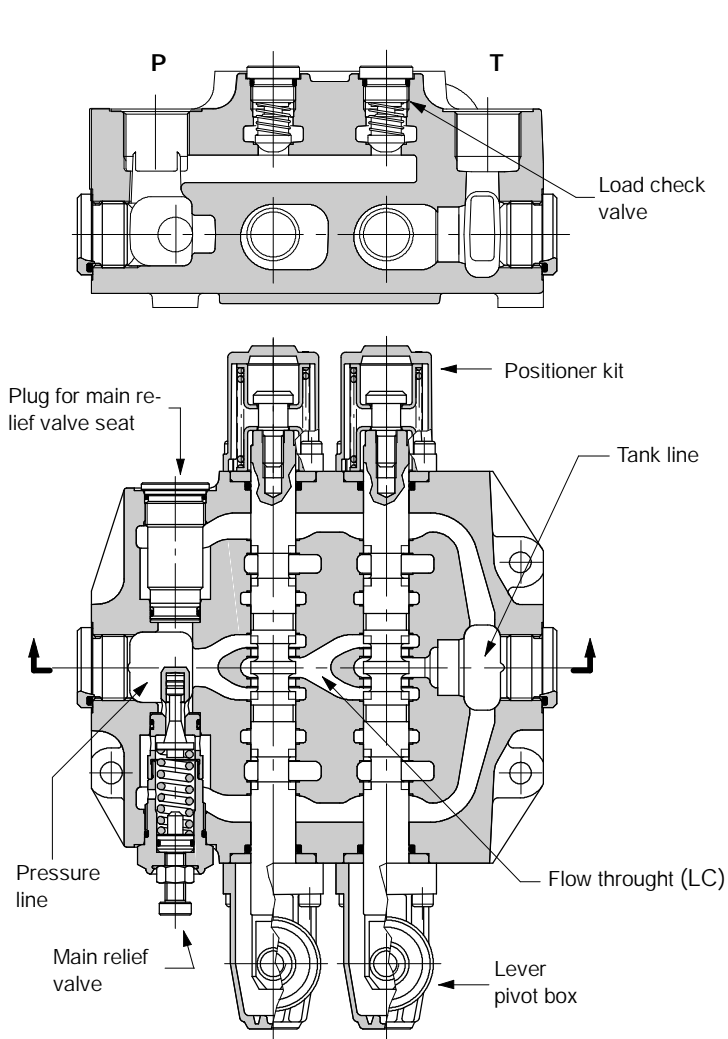
## Standard threads

PORTS	BSP (ISO 228/1)	UN-UNF (ISO 11926-1)	METRIC (ISO 6149)
Inlet P and carry-over C	G 3/4	1 1/16-12 UN-2B (SAE 12)	M27x2
A and B ports	G 1/2	7/8-14 UNF-2B (SAE 10)	M22x1,5
Outlet T	G 3/4	1 1/16-12 UN-2B (SAE 12)	M27x2
PILOT PORTS			
Hydraulic	G 1/4	9/16-18 UNF-2B (SAE 6)	G 1/4
Pneumatic	NPTF 1/8-27	NPTF 1/8-27	NPTF 1/8-27

# SDM140

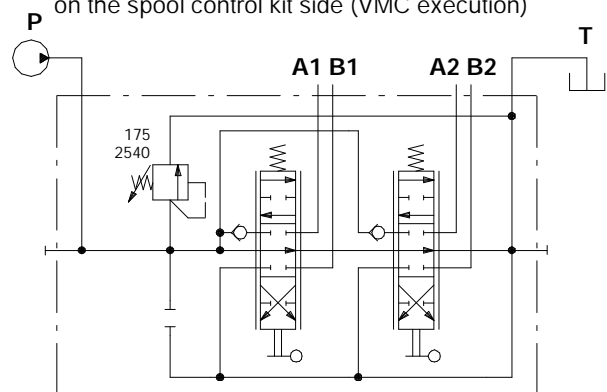
## Hydraulic circuit

Standard configuration with top inlet and outlet ports (**PSA** execution).



Ex:  
SDM140/2-P(YG3-175)/18L/18L/PSA

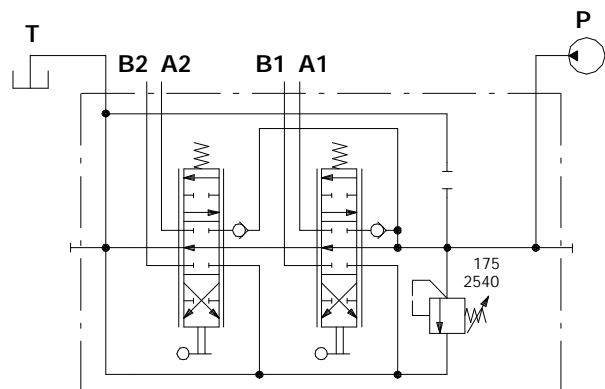
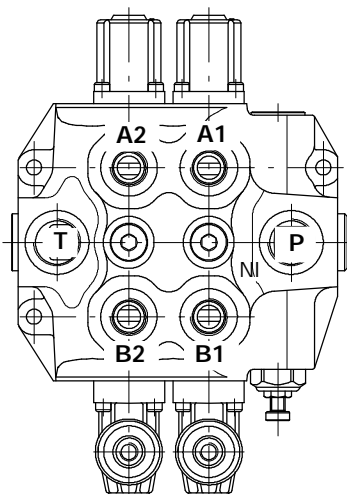
On request the main relief valve can be assembled on the spool control kit side (VMC execution)



Ex:  
SDM140/2-P(YG3-175)/18L/18L/PSA-VMC

## Right inlet

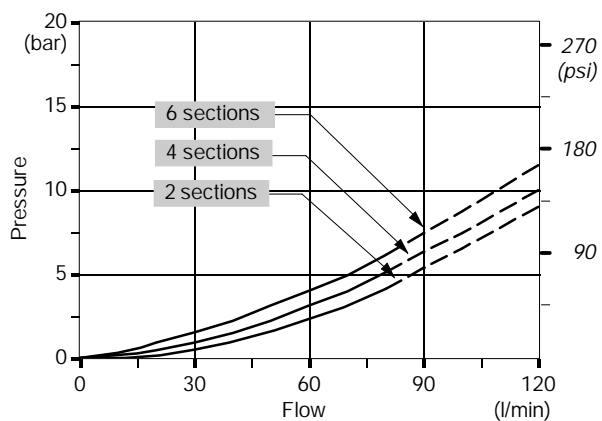
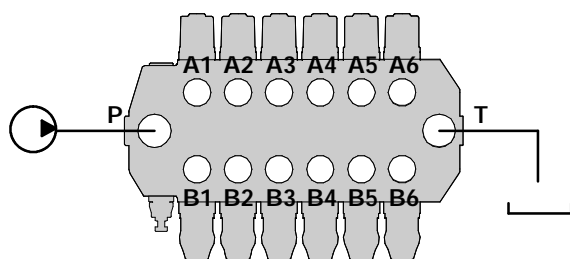
Simmetrical body allows the reverse assembly of spools and relative kits (execution ED).



Ex:  
SDM140/2-P(YG3-175)/ED-18L/ED-18L/PSA

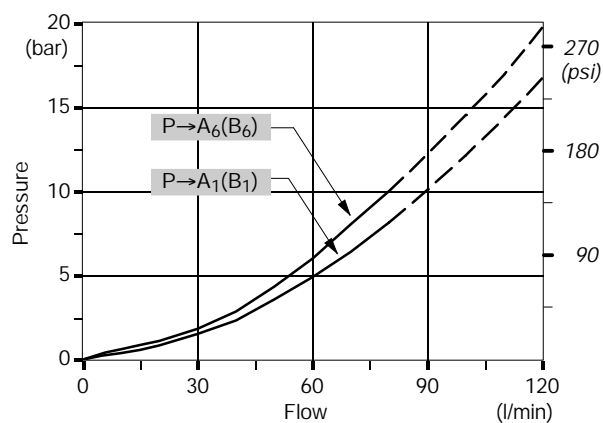
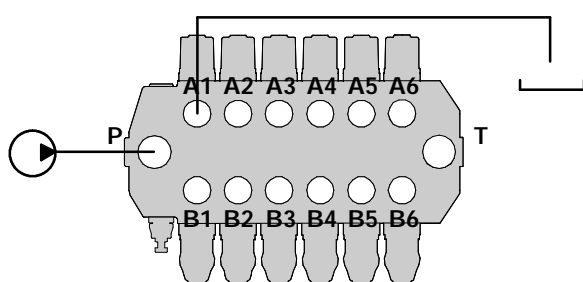
### Open centre

From top inlet to top outlet (execution PSA).



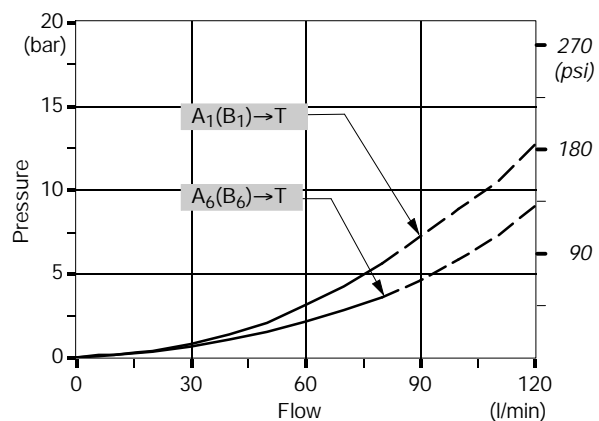
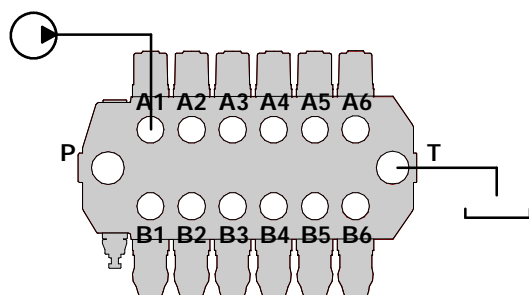
### Inlet to work port

From top inlet to A port (spool in position 1) or B port (spool in position 2).



### Work port to outlet

From A port (spool in position 2) or B port (spool in position 1) to top outlet.



NOTE - Measured with spool type 1.

# SDM140

## Ordering codes

### Description example:

SDM140/ 2 - P (YG3-175) / 1 8 L / 1 8IM . P2(G3-100) / PSA \*

1.

2.

3.

4.

5.

6.

7.

8.

Pressure relief valve setting in bar

Port relief valve setting in bar

### 1. Body kits (\*)

TYPE CODE DESCRIPTION

*Without service port valves prearrangement*

1-P 5KC1973000 1 section

2-P 5KC1963000 2 sections

3-P 5KC1923008 3 sections

4-P 5KC1933004 4 sections

5-P 5KC1943004 5 sections

6-P 5KC1953000 6 sections

*Include body, seals, rings and load check valves.*

### 2. Inlet relief options

page 10

TYPE CODE DESCRIPTION

*VMD140/1: direct pressure relief valve type Y (standard)*

(YG3-175) X134121175 Range 125 to 250 bar / from 1800 to 3600 psi

*VMP140/1: pilot operated pressure relief valve type X*

(XG-175) X134211175 Range 25 to 280 bar / from 360 to 4060 psi

SV XTAP530590 Plug for main relief valve seat

### 3. Spools

page 12

TYPE CODE CIRCUIT DESCRIPTION

1 3CU1310401 Double acting, 3 pos., with A and B closed in neutral position

2 3CU1325401 Double acting, 3 pos., with A and B open to tank in neutral position

2H 3CU1325200 Double acting, 3 pos., with A and B partially open to tank

3 3CU1331130 Single acting on A, 3 pos., B plugged: requires G1/2 plug (see part I)

4 3CU1335130 Single acting on B, 3 pos., A plugged: requires G1/2 plug (see part I)

*Special spools: need special body kit*

J 5 3CU1340420 Double acting, 4 pos., with A and B to tank in 4<sup>th</sup> position (float)

8P 3CU1361400 Double acting, 3 pos., with regenerative in pos. 2

### 4. "A" side spool positioners

page 16

TYPE CODE DESCRIPTION

8 5V08108010 With spring return in neutral position

8D 5V08108202 As type 8 for dual control

8D1 5V08108210 As type 8 for dual control (radial hole)

8K 5V08708112 As type 8 for 12 VDC spool solenoid lock device

8MHA 5V08108533 Spring return to neutral spool positioner with ON/OFF spool position signal

9B 5V09108040 With detent in pos. 1 and spring return neutral pos.

10B 5V10108040 With detent in pos. 2 and spring return neutral pos.

11B 5V11108040 With detent in pos. 1 and 2, spring return neutral pos.

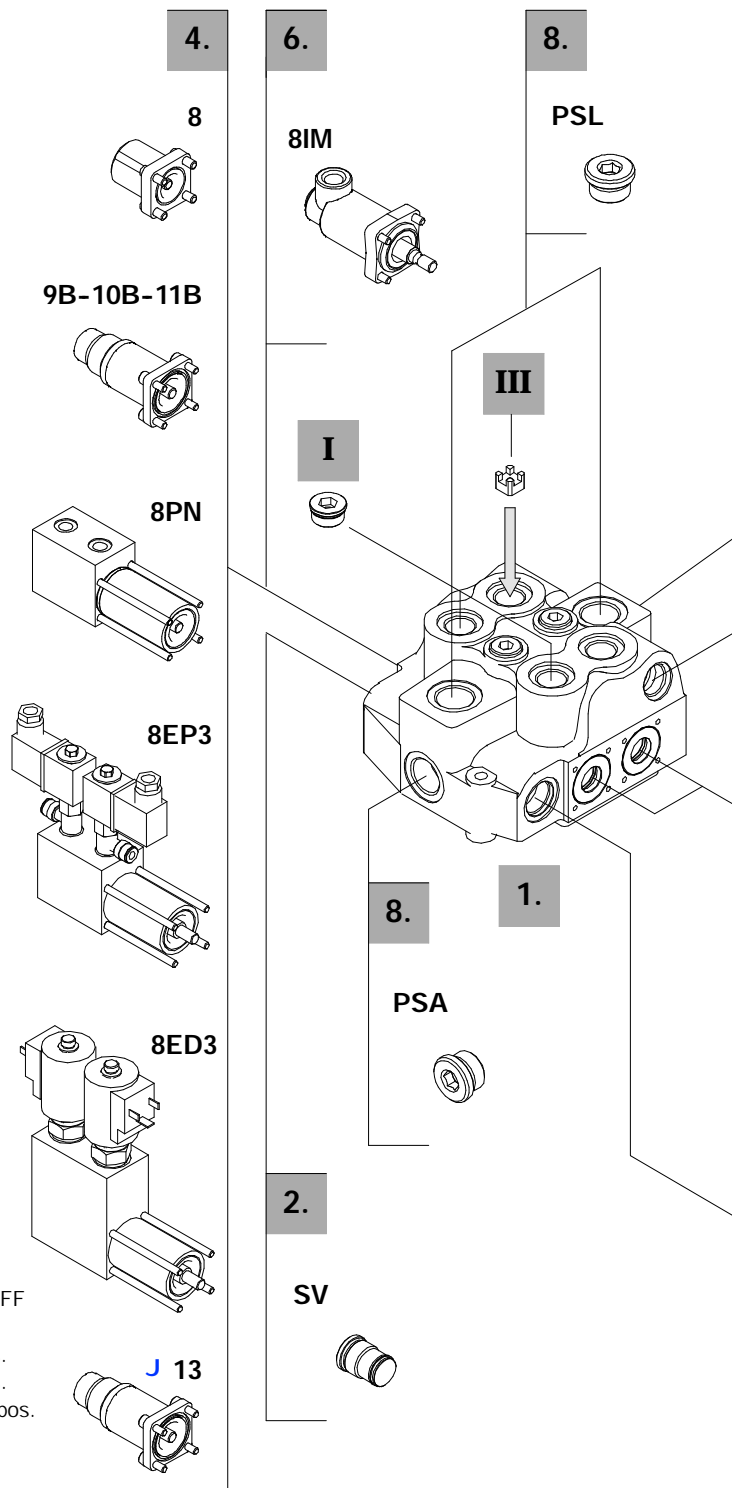
8PN 5V08108701 ON/OFF pneumatic

8EP3 5V08108735 12 VDC ON/OFF electro-pneumatic

5V08108740 24 VDC ON/OFF electro-pneumatic

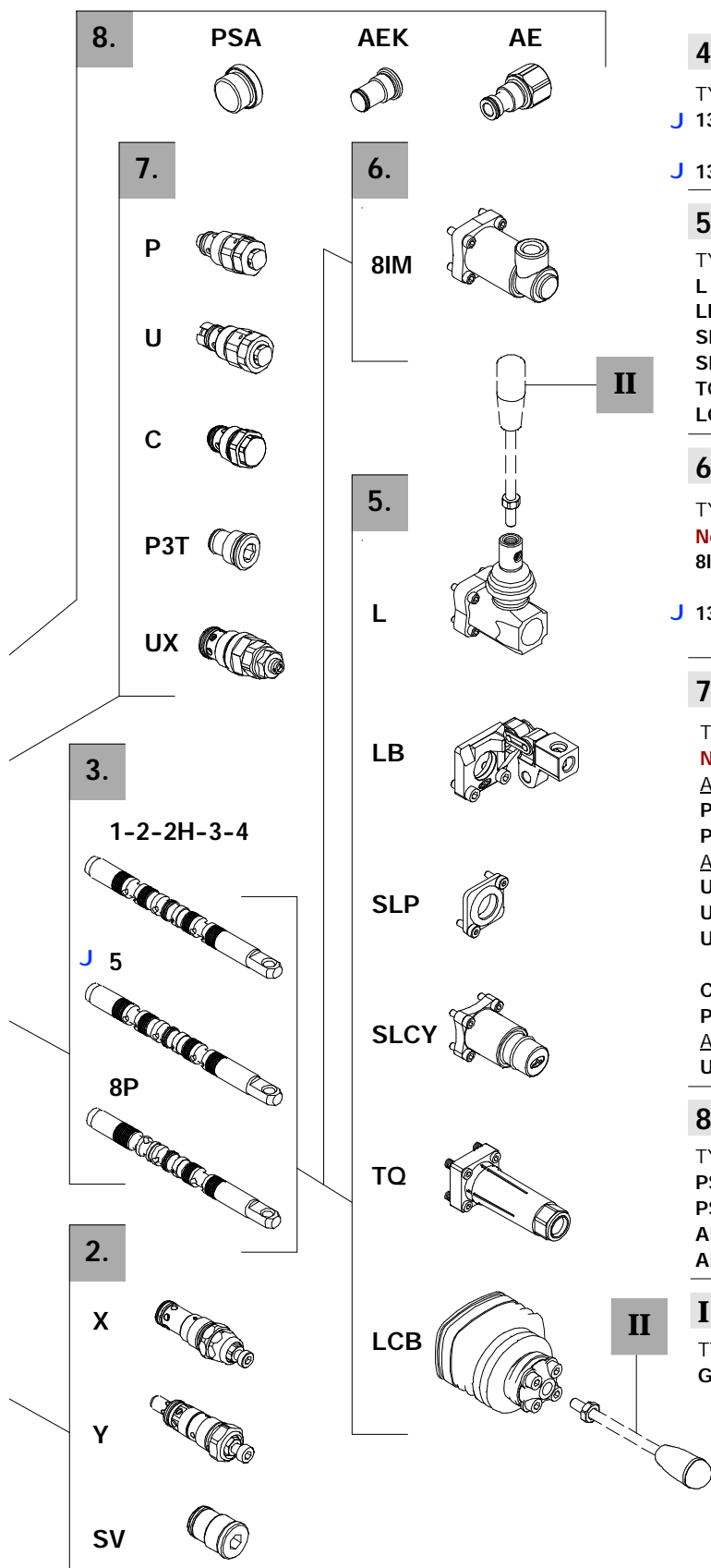
8ED3 5V08108360 12 VDC ON/OFF electro-hydraulic

5V08108361 24 VDC ON/OFF electro-hydraulic



NOTE (\*) - Items are referred to **BSP** thread.





NOTE **J** - Spools and positioners with the same symbol must be assembled together: for more informations see relevant pages.

#### 4. "A" side special spool positioners *page 16*

TYPE	CODE	DESCRIPTION
<b>J 13</b>	5V13108040	With detent in position 3 and spring return neutral position
<b>J 13K</b>	5V13708112	As type 13 for 12 VDC spool solenoid lock device

#### 5. "B" side spool control kits *page 22*

TYPE	CODE	DESCRIPTION
<b>L</b>	5LEV108000	Standard lever
<b>LB</b>	5LEV308000	Steel lever
<b>SLP</b>	5COP108000	Without lever, with dust-proof plate
<b>SLCY</b>	5COP208060	Without lever, with cap
<b>TQ</b>	5TEL108110	Control for flexible cable
<b>LCB</b>	5CLO308100	Joystick lever for 2 sections

#### 6. Hydraulic spool control kits \* *page 26*

TYPE	CODE	DESCRIPTION
<b>Need special body kit</b>		
<b>8IM</b>	5IDR208300	Proportional hydraulic operated with spring return in neutral position
<b>J 13IM</b>	5IDR208213	Proportional hydraulic operated with extra stroke for float position and spring return in neutral pos.

#### 7. Port service valves *page 27*

TYPE	CODE	DESCRIPTION
<b>Need special body kit</b>		
<u>Anti-shock valve</u>		
<b>P(G3-100)</b>	3XCAR208113	Range 100 to 250 bar / from 1450 to 3600 psi
<b>P(G4-200)</b>	3XCAR208114	Range 200 to 315 bar / from 2900 to 4600 psi
<u>Anti-shock and anti-cavitation valve</u>		
<b>U(G2-63)</b>	XCAR308112	Range 63 to 125 bar / from 900 to 1800 psi
<b>U(G3-100)</b>	XCAR308115	Range 100 to 250 bar / from 1450 to 3600 psi
<b>U(G4-200)</b>	XCAR308114	Range 200 to 315 bar / from 2900 to 4600 psi
<b>C</b>	XCAR408110	Anti-cavitation
<b>P3T</b>	3XTAP524290	A and B ports valve blanking plugs
<u>Anti-shock and anti-cavitation valve</u>		
<b>UX(G-145)</b>	X143411145	Range 100 to 280 bar / from 1450 to 4060 psi

#### 8. Inlet and outlet \* *page 31*

TYPE	CODE	DESCRIPTION
<b>PSA</b>	3XTAP732200	Top inlet and outlet (n.2 G 3/4 plugs required)
<b>PSL</b>	3XTAP732200	Side inlet and outlet (n.2 G 3/4 plugs required)
<b>AE</b>	XGIU536695	G 3/4 carry-over sleeve
<b>AEK</b>	XGIU532465	Plug for closed centre circuit

#### I Ports plug \*

TYPE	CODE	DESCRIPTION
<b>G1/2</b>	3XTAP727180	For single acting (spools type 3 and 4)

#### II Optional hand levers

TYPE	CODE	DESCRIPTION
<b>AL01/M10x200</b>	170012020	For L lever box L= 200 mm/7.87in
<b>AL08/M12x200</b>	170013120	For LB lever or LCB joystick L=200mm/7.87in

#### III Restrictors

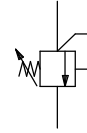
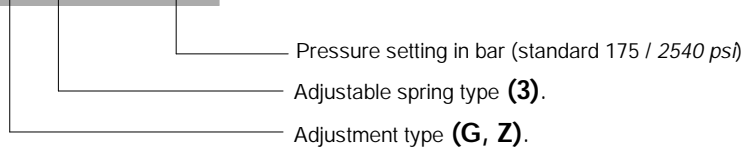
TYPE	CODE	DESCRIPTION
<b>R3,6</b>	3SPE217060	Restrictor $\varnothing$ 3.6 mm / 0.142 in for G 1/2 port

# SDM140

## Inlet relief options

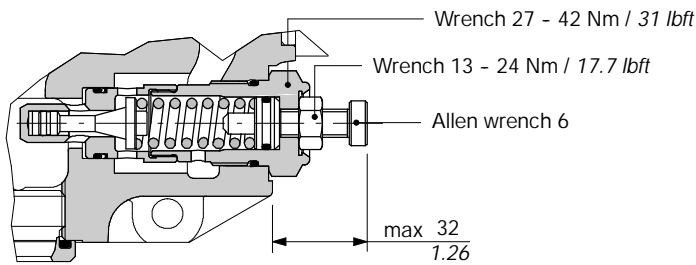
### Direct pressure relief valve

VMD140 (Y G 3 - 175)

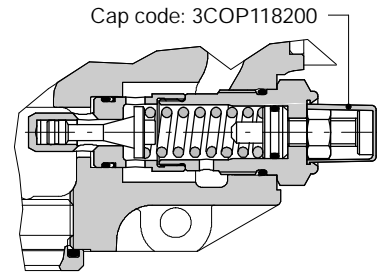


### Adjustment type

**G:** with screw

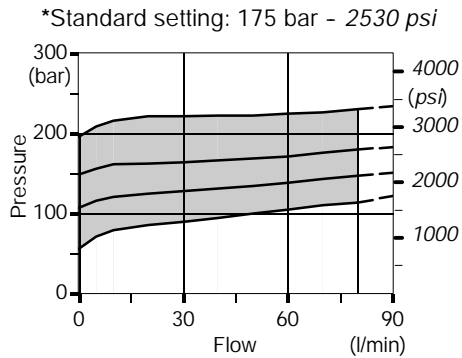


**Z:** with nylon tamper proof cap

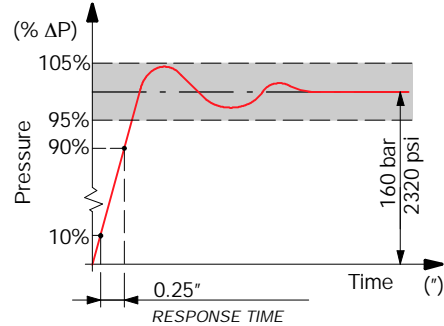


### Performance data

#### Spring nr. 3

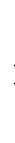
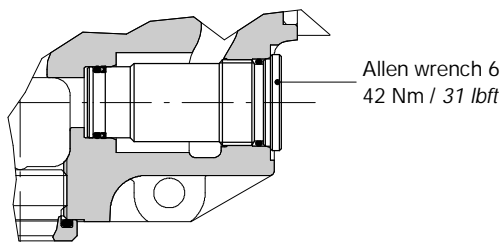


#### Response time



NOTE (\*) - Standard setting is referred to 10 l/min flow.

### SV: relief valve blanking plug

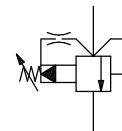


### Pilot operated pressure relief valve

**VMP140 ( X G - 175 )**

Pressure setting in bar (standard 175 / 2540 psi)

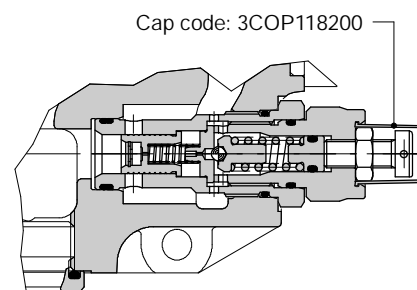
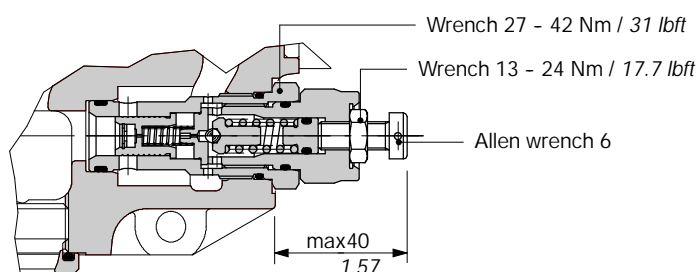
Adjustable type **(G)**.



### Adjustment type

**G:** with screw

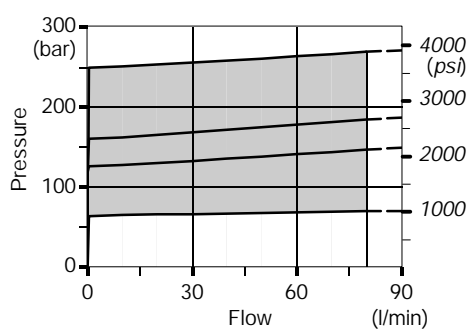
**Z:** with nylon tamper proof cap



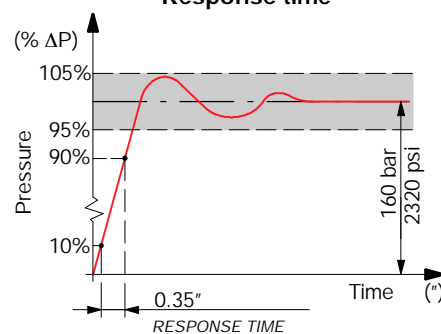
### Performance data

#### Range setting

\*Standard setting: 175 bar - 2530 psi



#### Response time

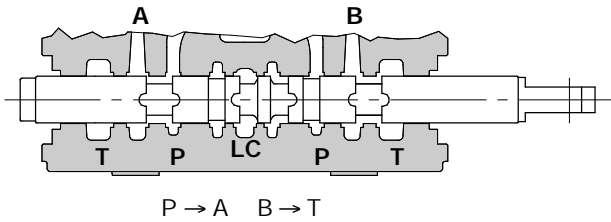


NOTE (\*) - Standard setting is referred to 10 l/min flow.

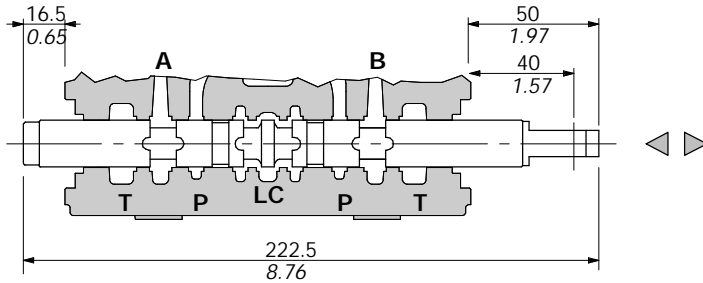
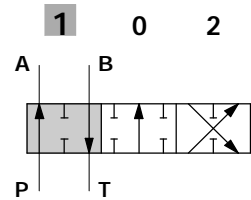
# SDM140

## Standard spool

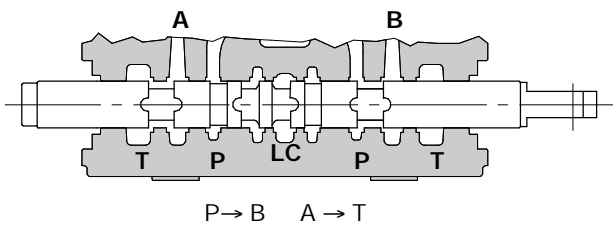
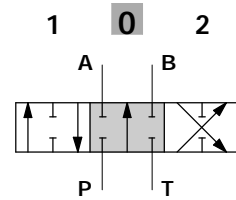
### Type 1



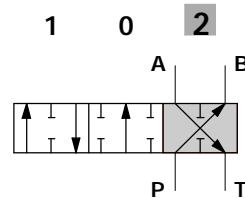
stroke = + 7 mm  
+ 0.28 in



P-A-B-T closed, with flow through line (LC) open

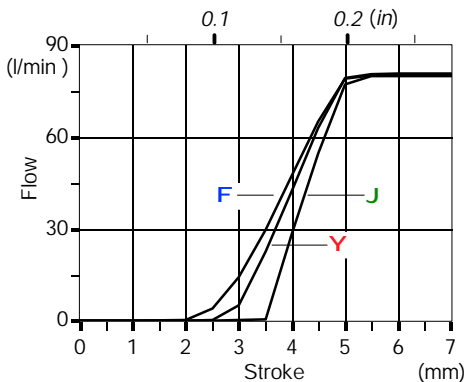


A stroke = - 7 mm  
- 0.28 in



### Performance data

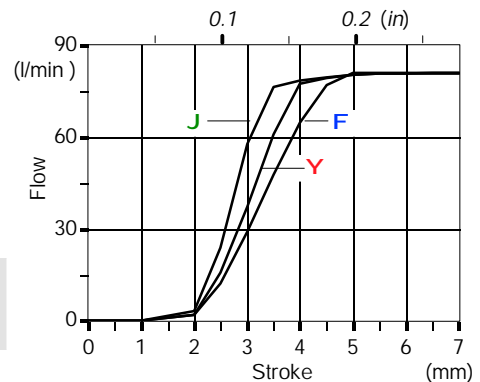
Spool metering P → A(B)



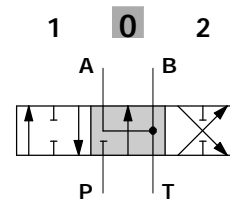
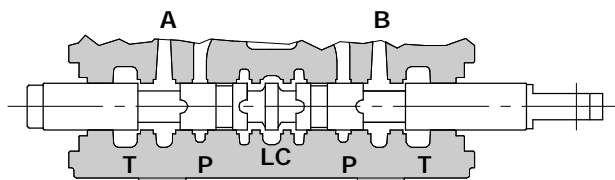
Q<sub>in</sub> = 80 l/min

- F P<sub>(on ports)</sub> = 63bar/900psi
- Y P<sub>(on ports)</sub> = 100bar/1450psi
- J P<sub>(on ports)</sub> = 250bar/3600psi

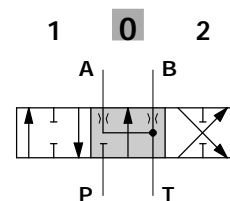
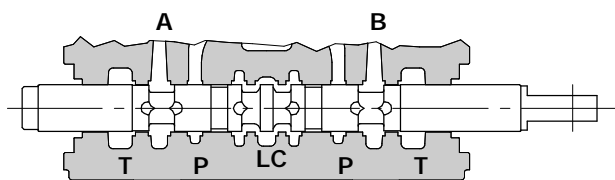
Spool metering A(B) → T



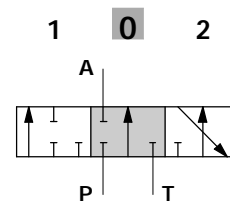
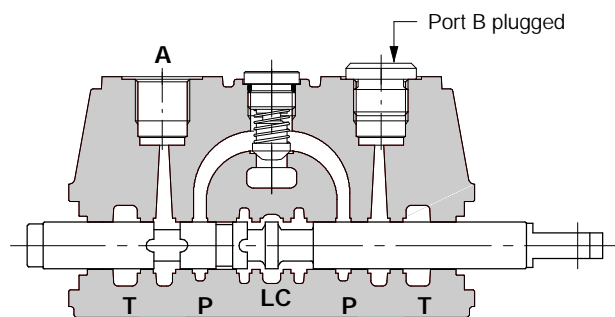
Type 2



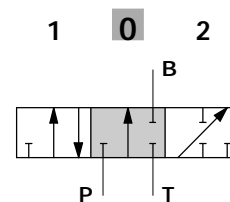
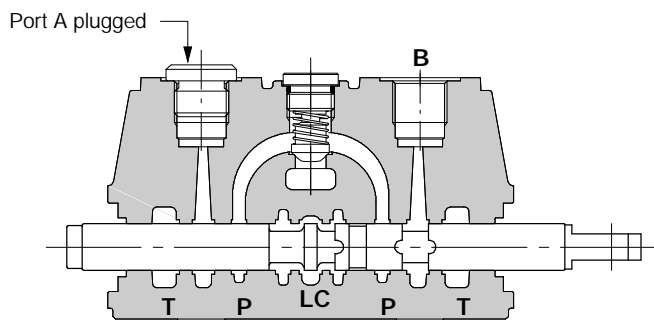
Type 2H



Type 3



Type 4

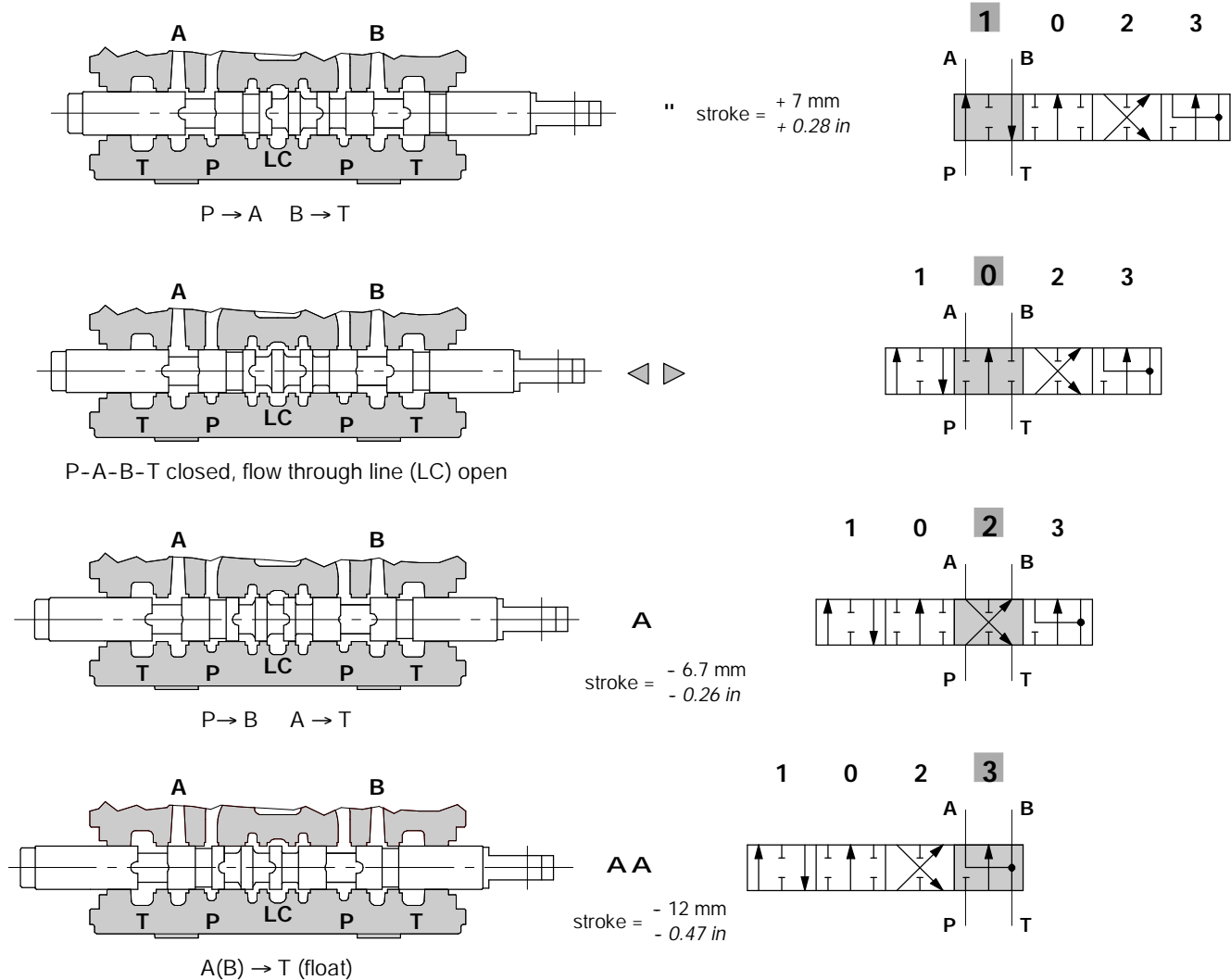


# SDM140

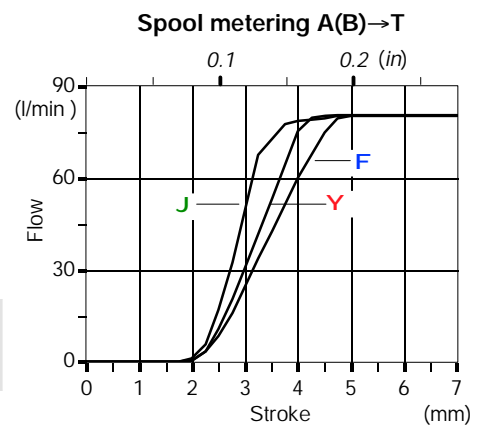
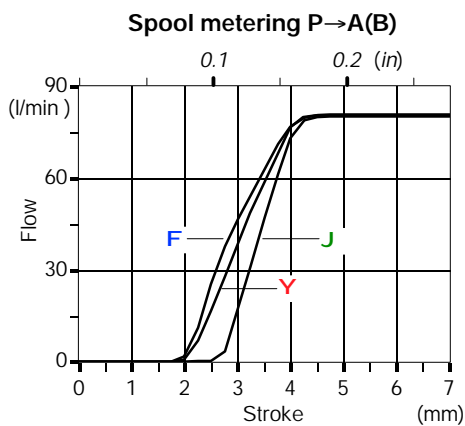
## Spool options

### Type 5

This spool must be used only with spool positioner type 13, 13K (see page 21).

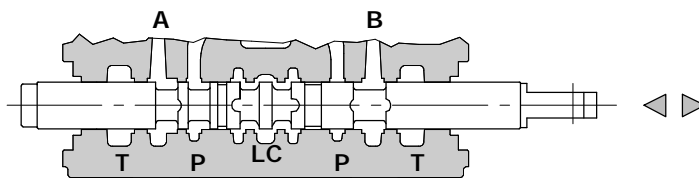
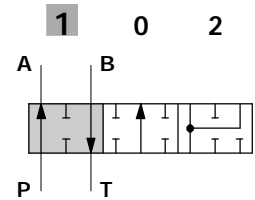
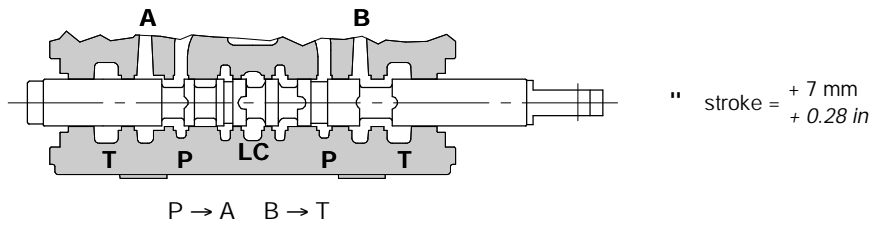


### Performance data

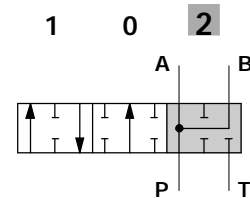
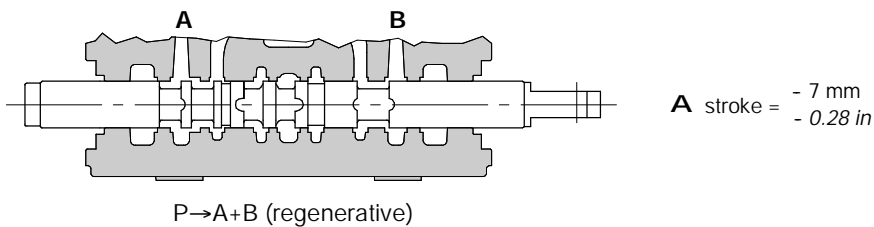
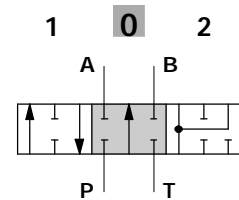


Type 8P

This spool needs special body with extra machining.

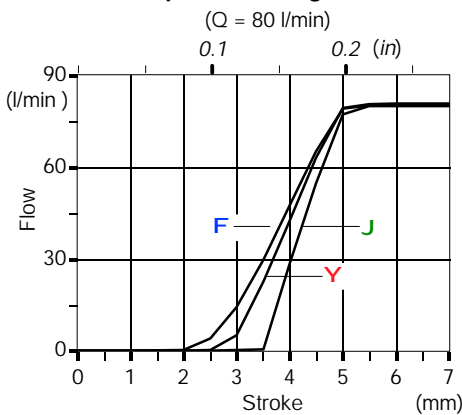


P-A-B-T closed, with flow through line (LC) open



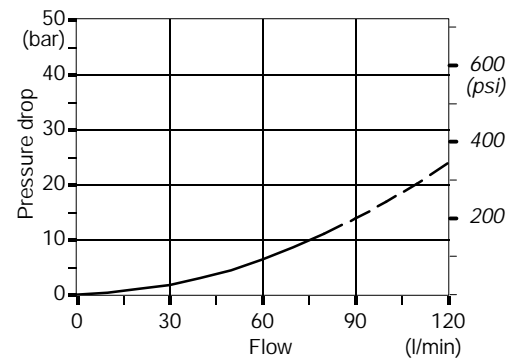
Performance data

Spool metering P→A



- Q<sub>in</sub> = 80 l/min
- F P<sub>(on ports)</sub> = 63bar/900psi
  - Y P<sub>(on ports)</sub> = 100bar/1450psi
  - J P<sub>(on ports)</sub> = 250bar/3600psi

Spool pressure drop A→B



# SDM140

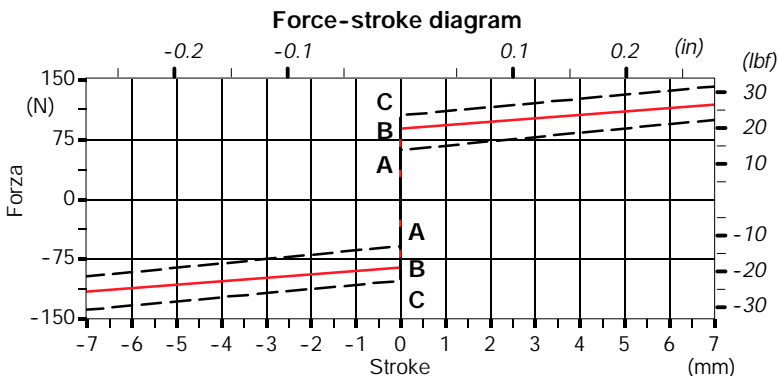
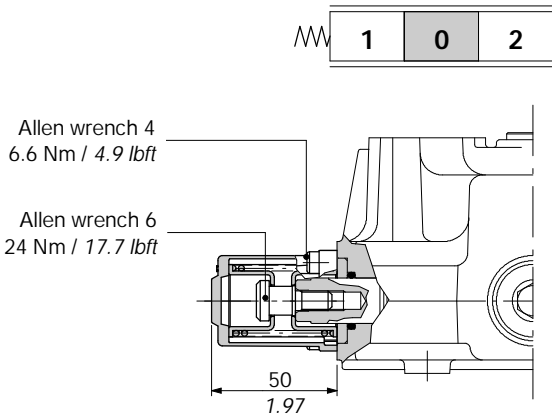
## "A" side spool positioners

### With spring return in neutral position

#### 8 kit

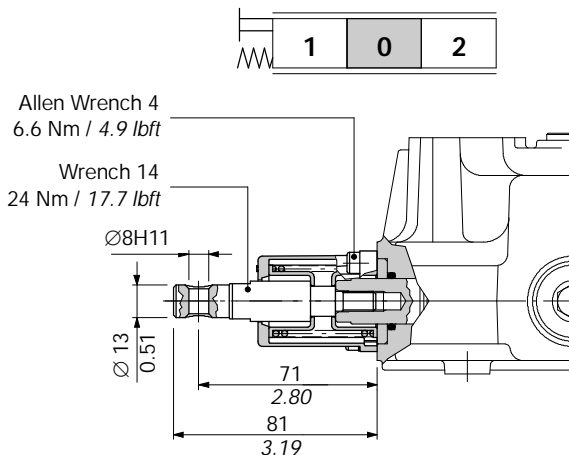
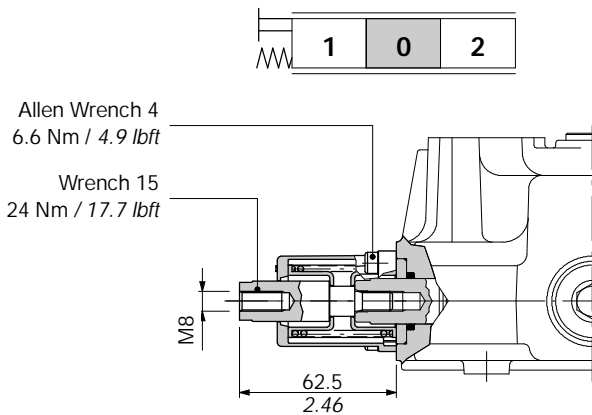
Supplied with standard spring type B (see force-stroke diagram).

Available with lighter spring type A (8MA code: 5V08108240) or heavier type C (8MC code: 5V08208000).

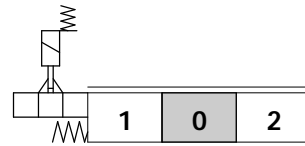
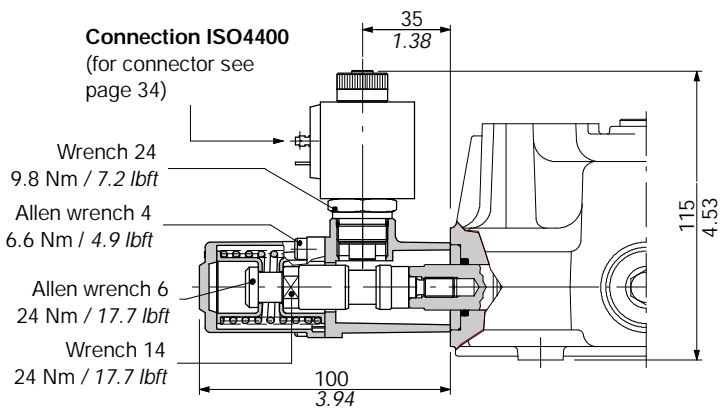


#### 8D kit

#### 8D1 kit



#### 8K kit



#### Solenoid operating features

- Nominal voltage : 12 VDC / 24 VDC
- Power rating : 18 W
- Duty cycle : 100%
- Electrical insulation : class F (VDE0580)

NOTE - In case of P, U and C port relief valves assembly, the coil needs to be turned 15° due to limited space.

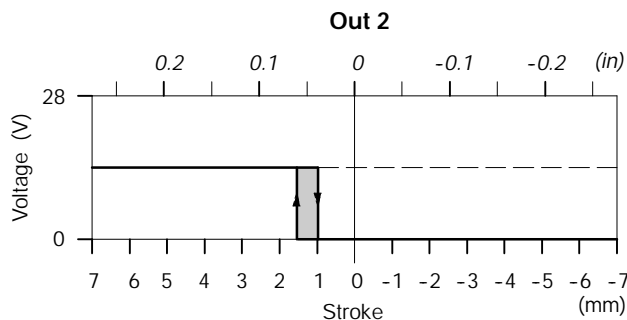
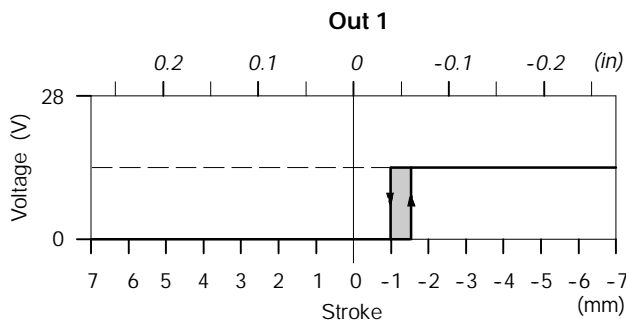
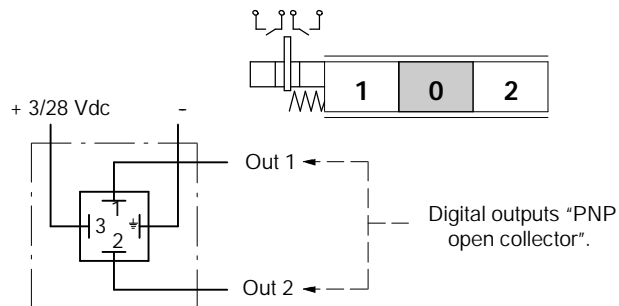
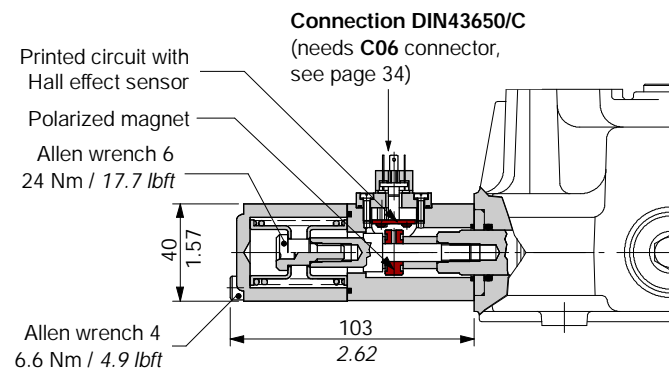


### Spring return to neutral spool positioner with ON/OFF spool position signal

#### 8MHA kit

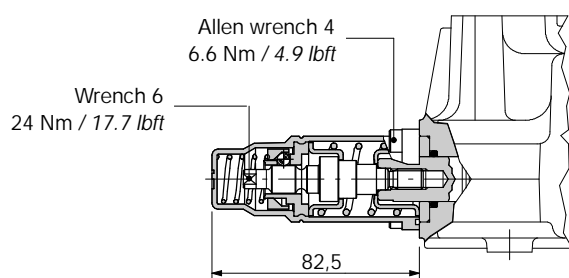
Module kit with electric ON/OFF signal to indicate the spool position.

Moving the polarized magnet connected to the spool, a Hall effect sensor will be actuated creating a low current output.



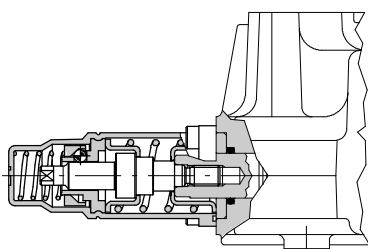
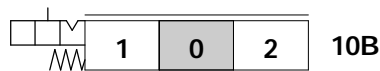
#### With detent

#### 9B-10B-11B kits



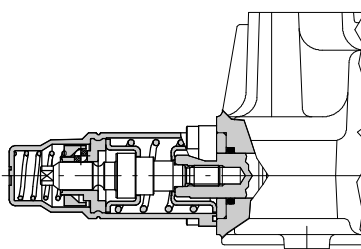
#### Operating features

Unlocking force: 220 N / 49.5 lbf ±10%



#### Operating features

Unlocking force: 260 N / 58.4 lbf ±10%



#### Operating features

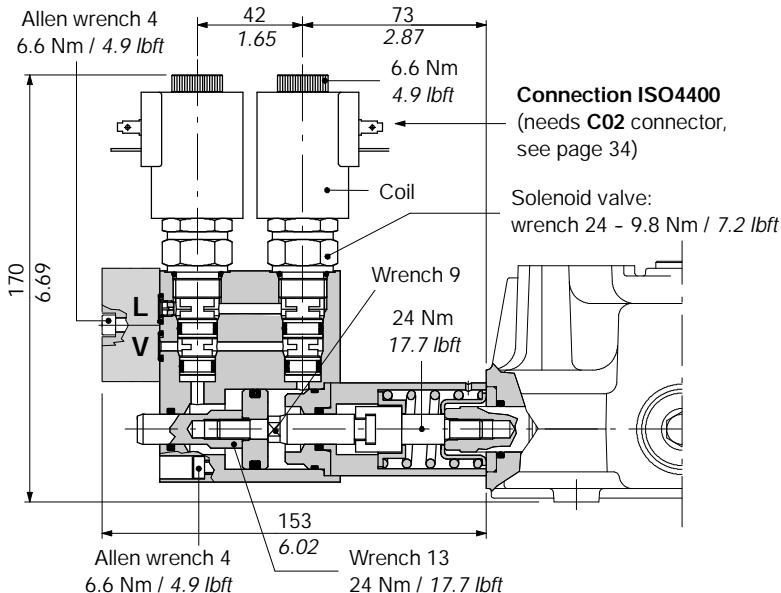
Unlocking force: 260 N / 58.4 lbf ±10%

# SDM140

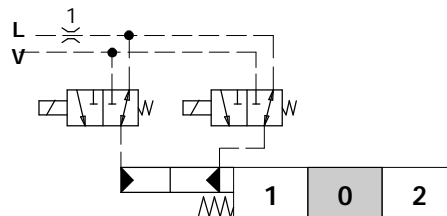
## "A" side spool positioners

### 8ED3 kit

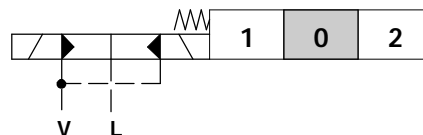
ON-OFF electro-hydraulic spool control kit with external pilot and drain.



#### Scheme



#### Scheme ISO 1219



#### Operating features

Pilot pressure ..... : min.10 bar - 145 psi  
 ..... : max.50 bar - 725 psi  
 Max.back pressure on outlet L ..... : 25 bar - 363 psi

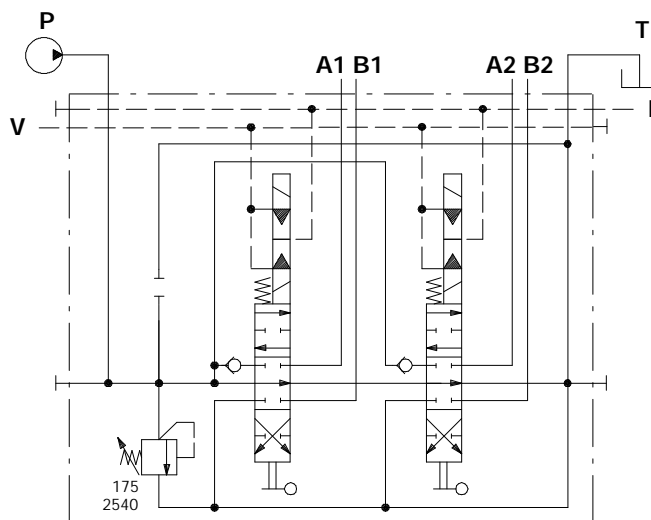
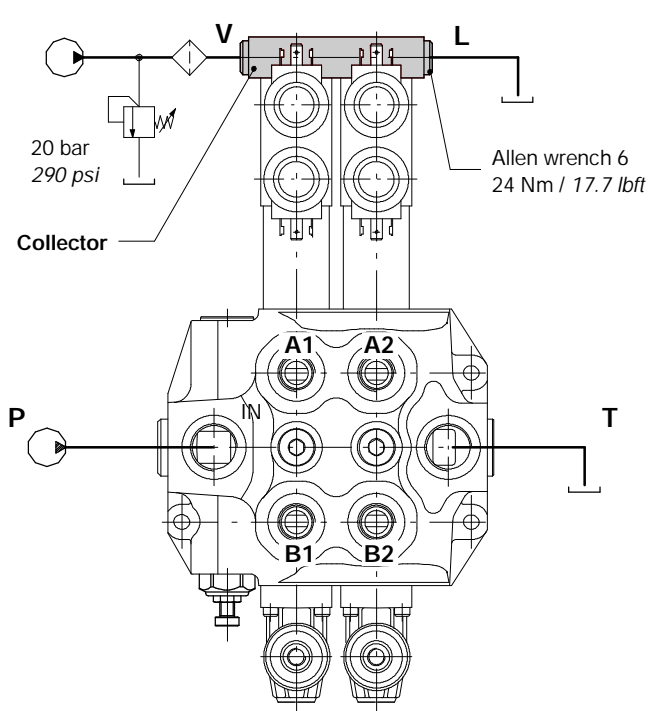
#### Solenoid operating features

Nominal voltage ..... : 12 VDC / 24 VDC  
 Power rating ..... : 21 W  
 Duty cycle ..... : 100%

### Ordering codes

CODE	DESCRIPTION
2S0EJ08002013	3 ways solenoid valve
2X4350012	12VDC coil
2X4350024	24VDC coil

### Collector kit for external pilot and drain



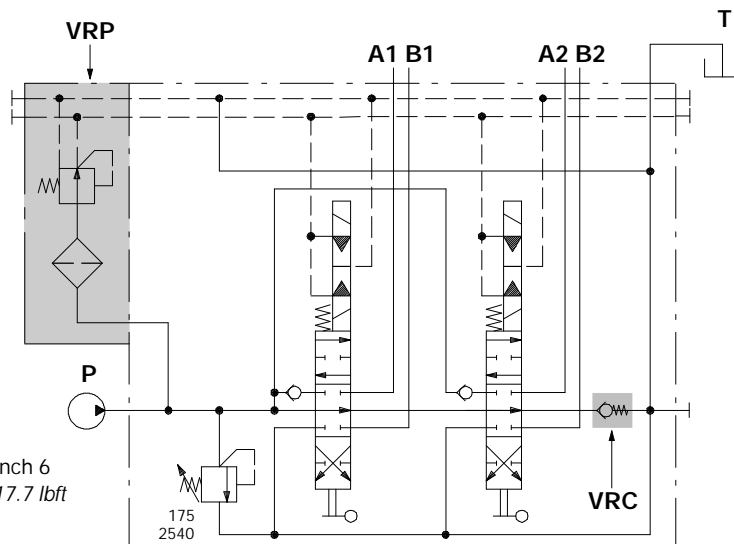
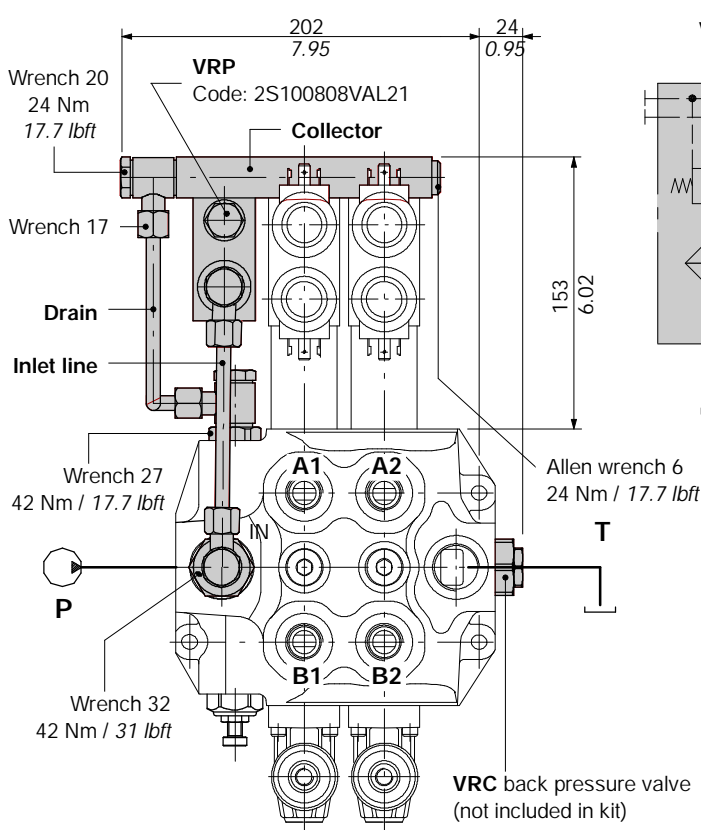
### Ordering codes (BSP thread)

TYPE	CODE	DESCRIPTION
KE1S0	5KE1S00030	Kit for 1 section
KE2S0	5KE2S00430	Kit for 2 sections
KE3S0	5KE3S00430	Kit for 3 sections
KE4S0	5KE4S00430	Kit for 4 sections
KE5S0	5KE5S00430	Kit for 5 sections
KE6S0	5KE6S00430	Kit for 6 sections

Ex:  
SDM140/2-P(YG3-175)/18ED3L/18ED3L/PSA-KE2S0-24VDC

### Collector kit with pilot and drain lines

The kit consists of a collector with VRP pressure reducing valve and relative pipes.



#### VRP valve operating features

Outlet pressure ..... : 20 bar / 290 psi  
 Max. flow ..... : 8 l/min  
 Filtering ..... : 80 μ

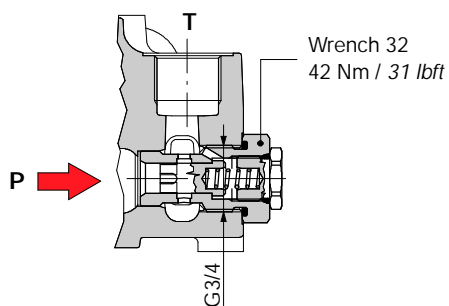
#### Ordering codes (BSP thread)

TYPE	CODE	DESCRIPTION
KE1R3	5KE1R30330	Kit for 1 section
KE2R3	5KE2R30330	Kit for 2 sections
KE3R3	5KE3R30330	Kit for 3 sections
KE4R3	5KE4R30330	Kit for 4 sections
KE5R3	5KE5R30330	Kit for 5 sections
KE6R3	5KE6R30330	Kit for 6 sections

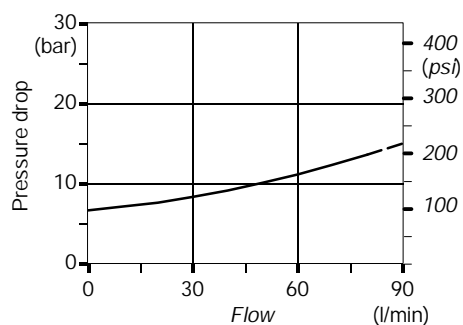
Ex:  
 SDM140/2-P(YG3-175)/18ED3L/18ED3L/VRC-KE2R3-24VDC

#### VRC valve : code X147600007

Valve assembled on flow through passage provides pilot pressure to the actuator.



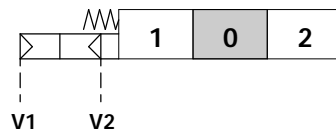
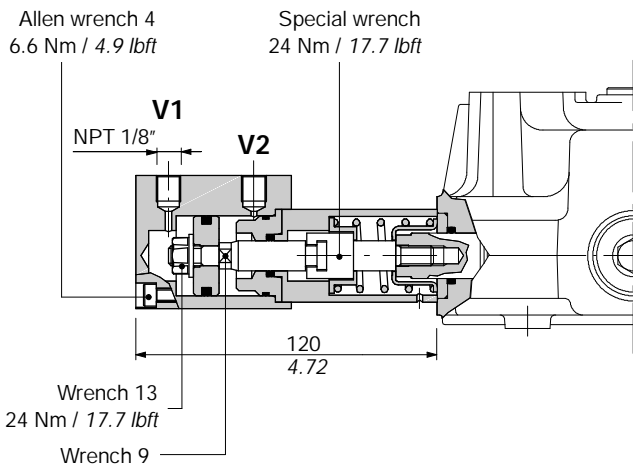
#### Pressure drop P→T



# SDM140

## "A" side spool positioners

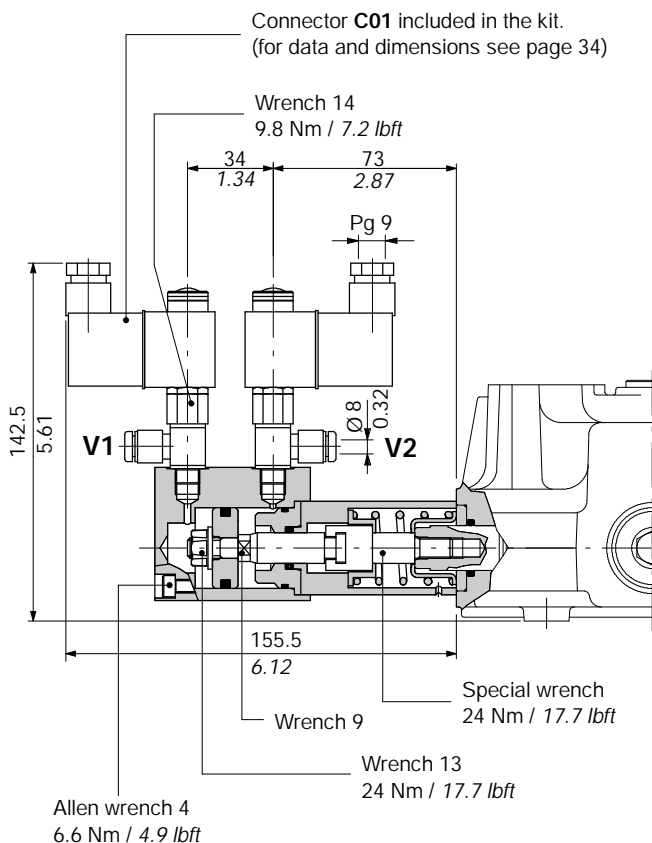
### 8PN kit



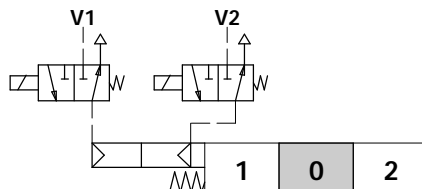
#### Operating features

Pilot pressure ..... : 6 bar (max.10)  
 : 87 psi (max.145)

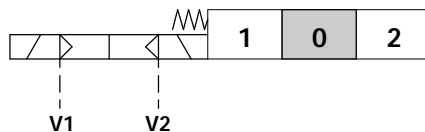
### 8EP3 kit



#### Scheme



#### Scheme ISO 1219



#### Operating features

Pilot pressure ..... : 6 bar (max.10)  
 : 87 psi (max.145)

#### Solenoid operating features

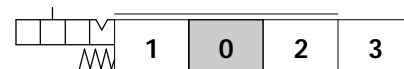
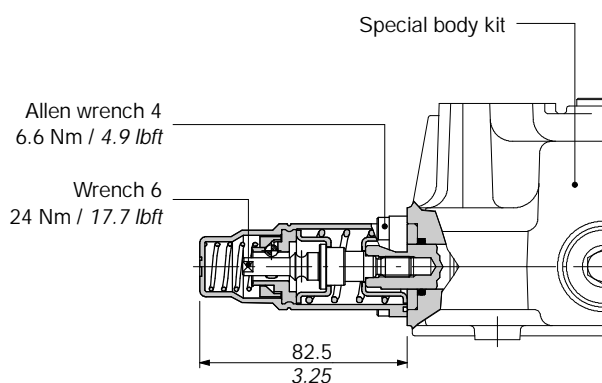
Nominal voltage ..... : 12 VDC / 24 VDC  
 Power rating ..... : 6 W  
 Duty cycle ..... : 100%

#### Pneumatic solenoid valve code (with connector)

CODE	DESCRIPTION
2X4001012	12VDC solenoid valve
2X4001024	24VDC solenoid valve

For spool type 5 (page 14)

### 13 kit

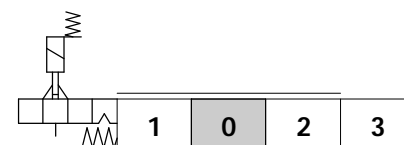
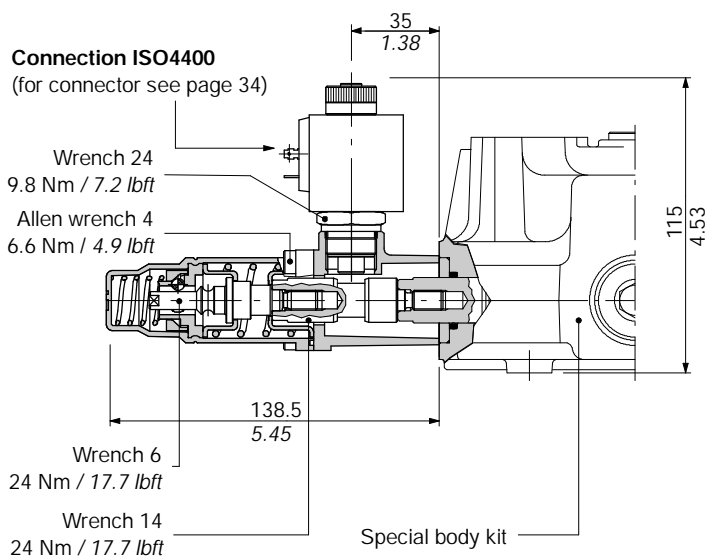


#### Operating features

Locking force ..... : 330 N / 74.2 lbf ±10%  
 Unlocking force ..... : 240 N / 54 lbf ±10%

### 13K kit

Connection ISO4400  
 (for connector see page 34)



#### Operating features

Locking force ..... : 330 N / 74.2 lbf ±10%  
 Unlocking force ..... : 240 N / 54 lbf ±10%

#### Solenoid operating features

Nominal voltage ..... : 12 VDC / 24 VDC  
 Power rating ..... : 18 W  
 Duty cycle ..... : 100%  
 Electrical insulation ..... : class F (VDE0580)

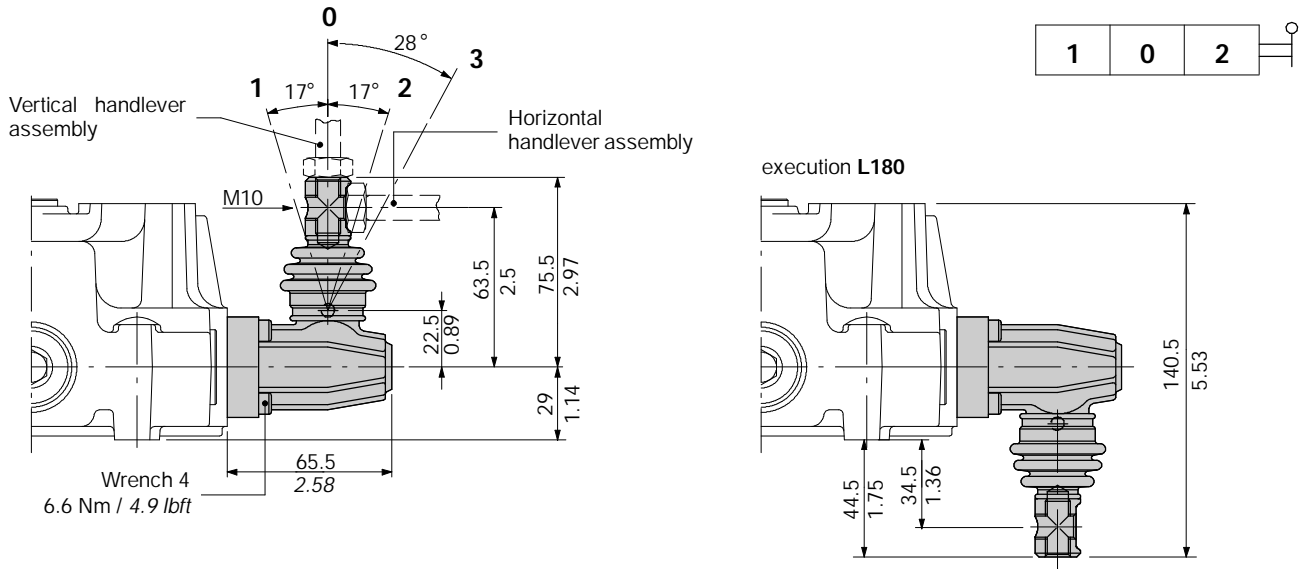
NOTE - In case of P, U and C port service valves assembly the coil needs to be turned 15° due to limited space.

# SDM140

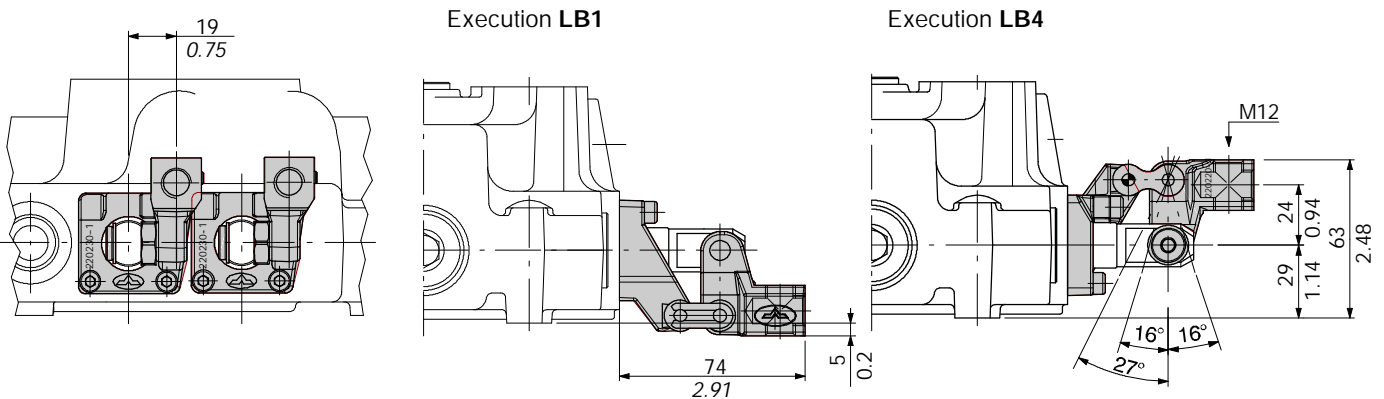
## "B" side options

### L lever box

Alluminium with protection boot lever pivot box; it can be rotated 180° (execution **L180**)

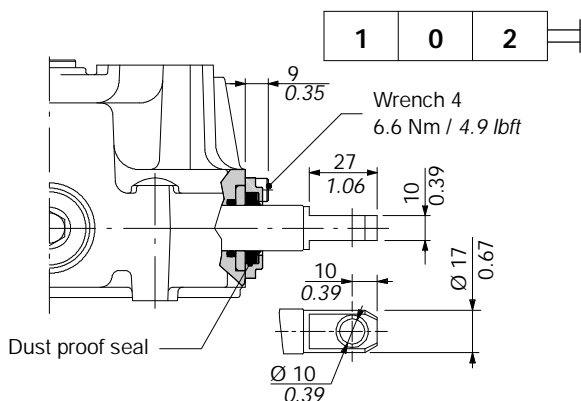


### LB steel lever



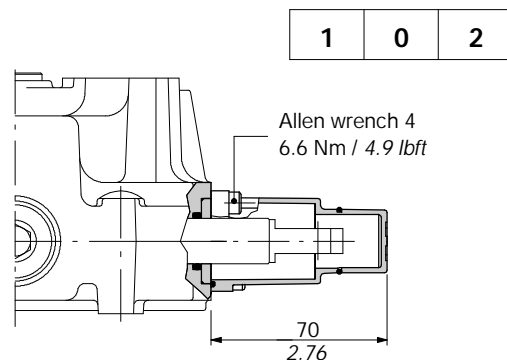
### SLP dust proof plate

Mechanical control with dust proof plate.



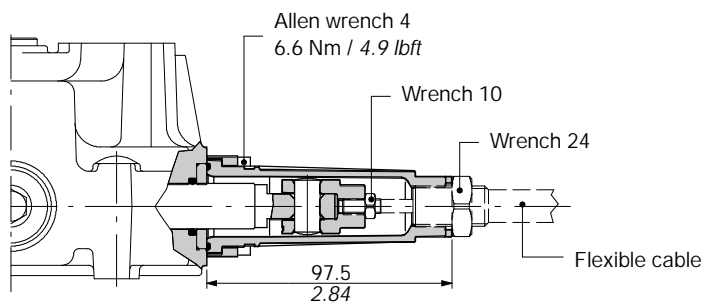
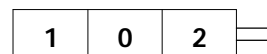
### SLCY cap

Protection cap with drain usable with pneumatic spool and electro-hydraulic control kit.



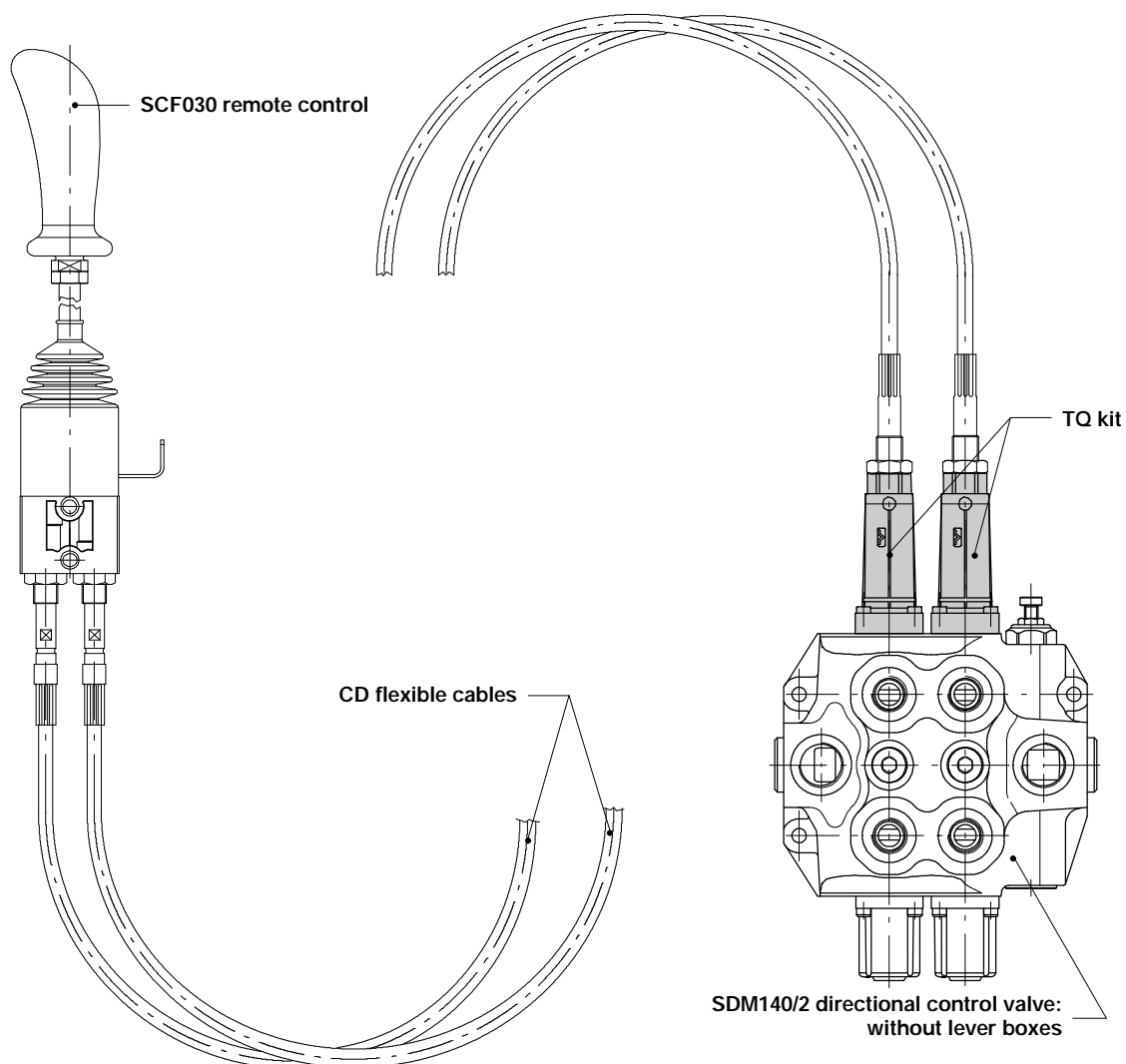
**TQ cable remote control**

Waterproof cap for remote control with flexible cable.



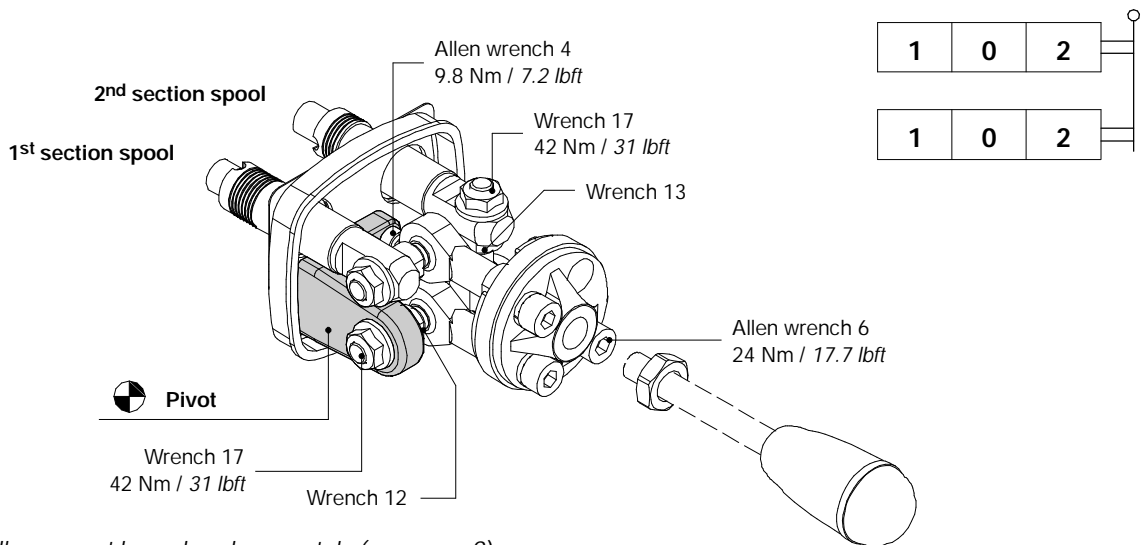
NOTE - For more information concerning remote cable control require appropriate documentation.

**Example of cable control**



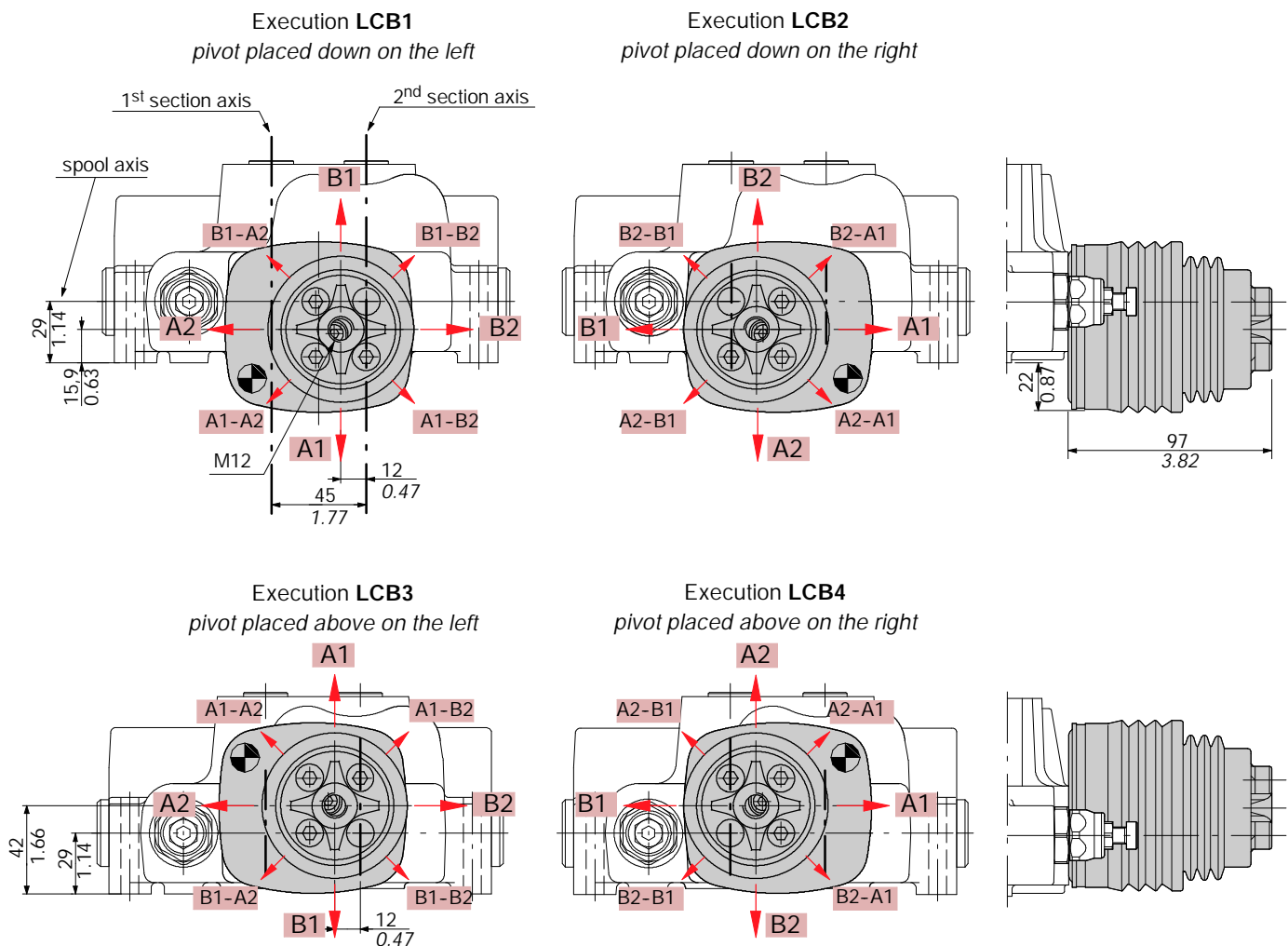
## "B" side options

### LCB joystick lever



NOTE - The handlever must be ordered separately (see page 9).

### Dimensions and movement scheme

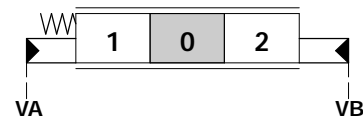
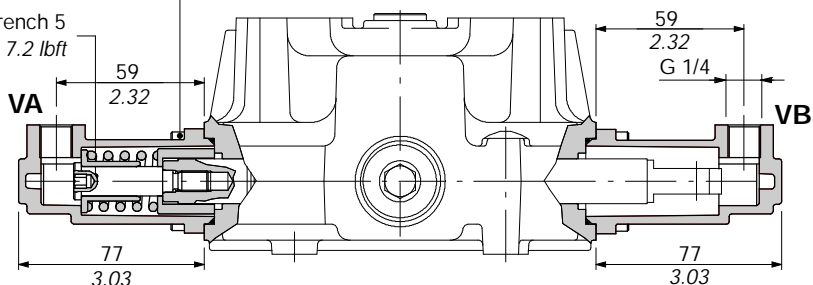


NOTE - Due to limited space in case of LCB3 or LCB4 configuration the assembly of ports service relief valves is not possible.



**8IM kit** (for single acting and double acting spools)

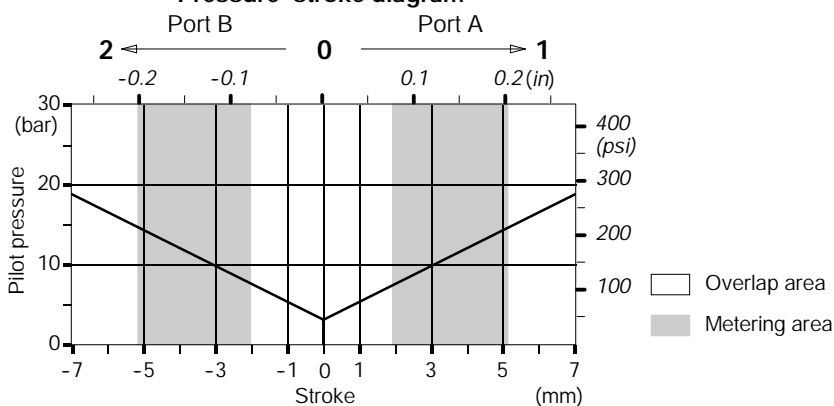
Allen wrench 4  
6.6 Nm / 31 lbft  
Allen wrench 5  
9.8 Nm / 7.2 lbft



**Operating features**

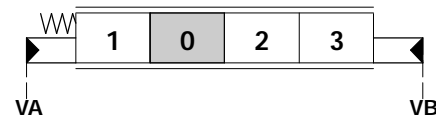
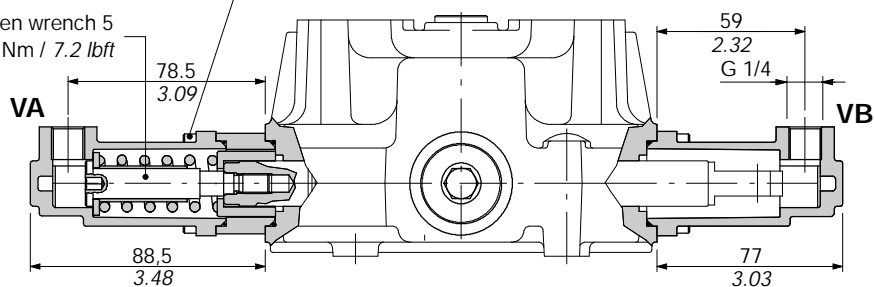
Max. pilot pressure . . . . . : 50 bar  
: 725 psi

**Pressure-stroke diagram**

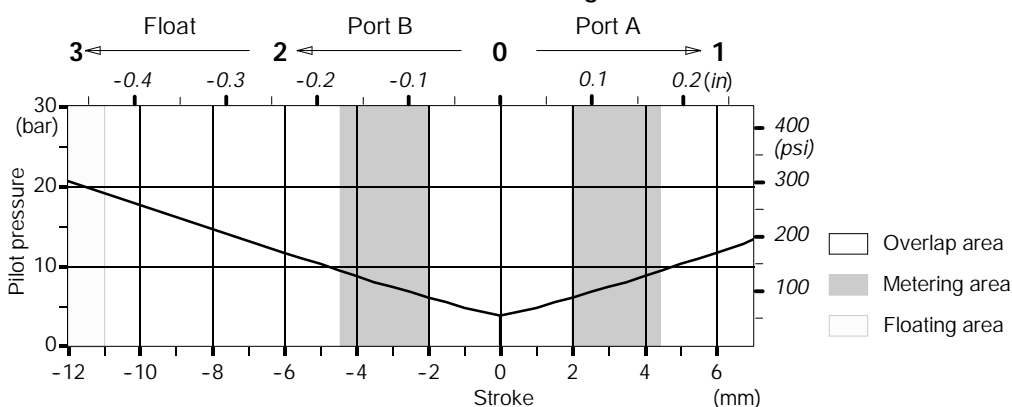


**13IM kit** (for spool type 5 with 4th float position see page 14)

Allen wrench 4  
6.6 Nm / 4.9 lbft  
Allen wrench 5  
9.8 Nm / 7.2 lbft

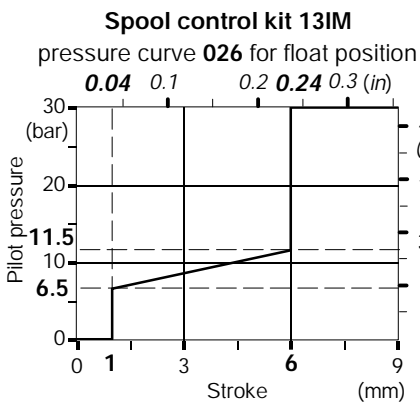
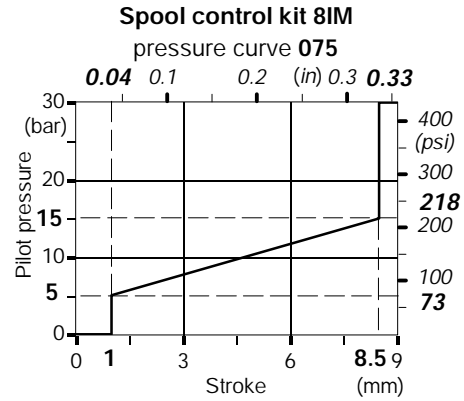


**Pressure-stroke diagram**

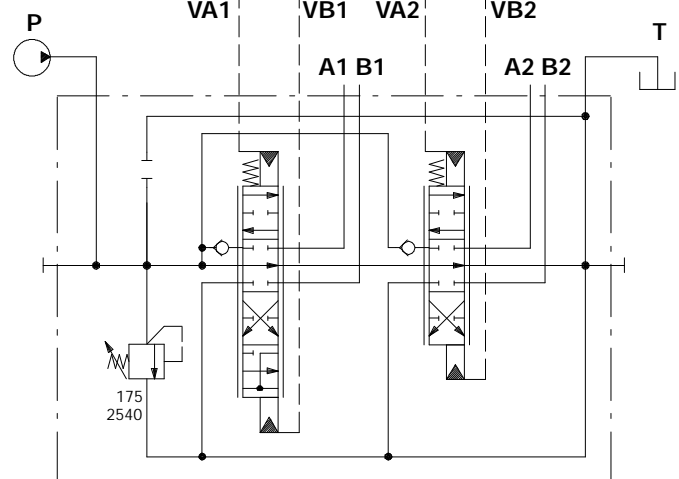
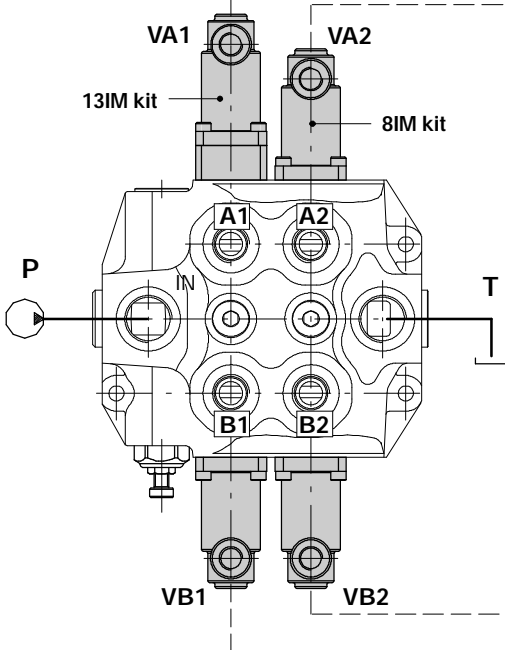
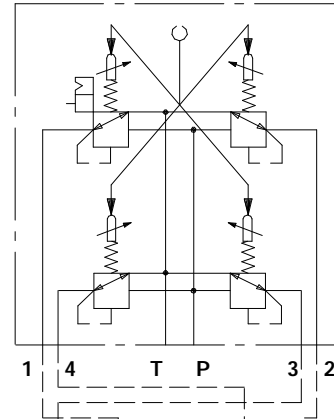
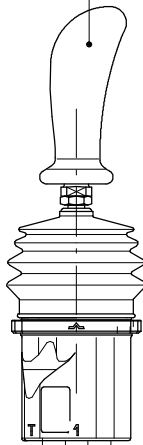


## Hydraulic spool control

### Connection example



Hydraulic pilot control valve series SV01

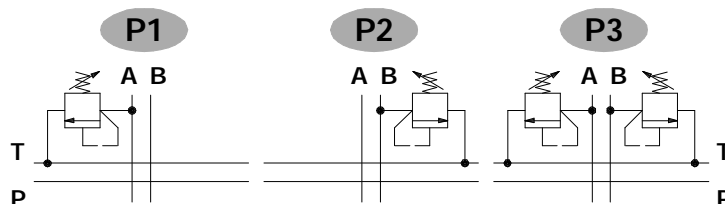


Example of specification :  
SDM140/2-P(YG3-175)/513IM/18IM/PSA +  
SV01-B/15W-026-075-026-075

### Anti-shock valve

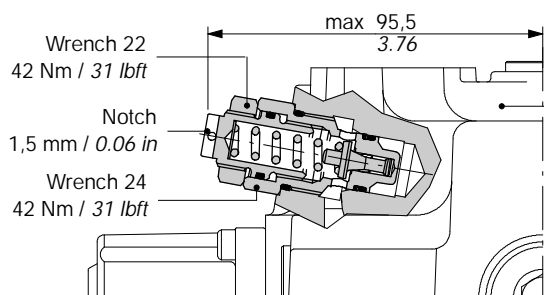
**P 1 ( G 3 - 100 )**

- Setting value in bar.
- Spring type (3, 4).
- Adjustment type (G, H).
- 1 mounted on A port.
- 2 mounted on B port.
- 3 mounted on A and B ports.



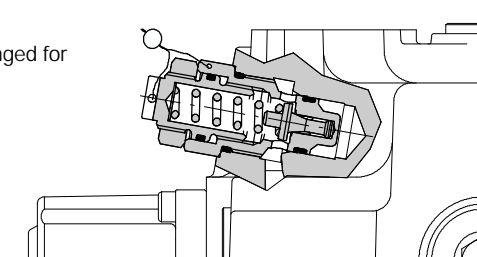
### Adjustment type

**G: with screw**



**H: valve set and locked**

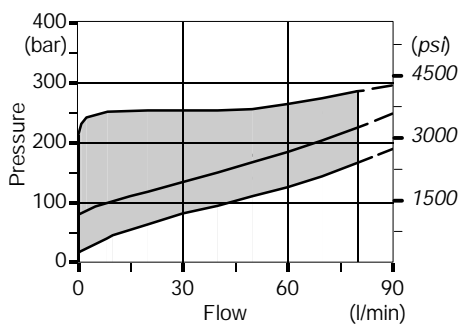
Special body prearranged for port service valves



### Performance data

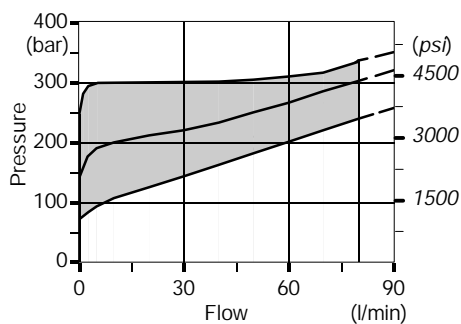
**Spring nr. 3 (blue band)**

\*Standard setting: 100 bar - 1450 psi

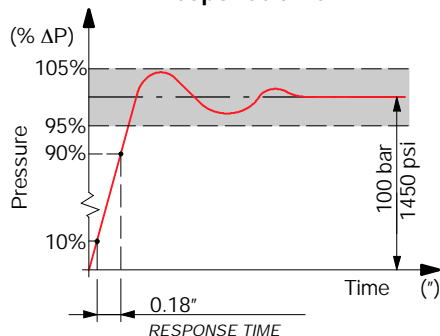


**Spring nr. 4 (red band)**

\*Standard setting: 200 bar - 2900 psi



**Response time**



NOTE (\*) - Standard setting is referred to 10 l/min flow.

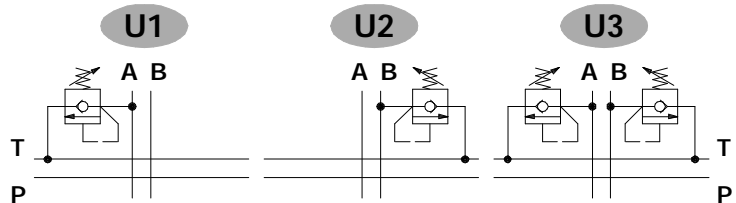
# SDM140

## Port relief options

### Anti-shock and anti-cavitation

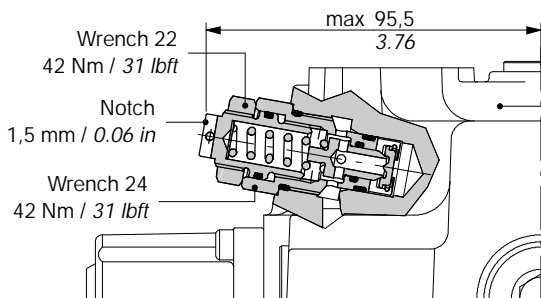
**U 1 ( G 3 - 100 )**

- Setting value in bar.
- Spring type (2, 3, 4).
- Adjustment type (G, H).
- 1** mounted on A port.
- 2** mounted on B port.
- 3** mounted on A and B port.



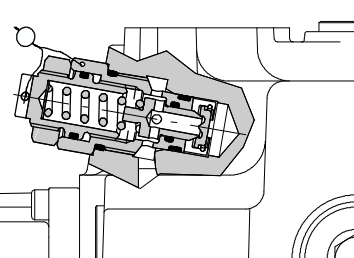
### Adjustment type

**G: with screw**



**H: valve set and locked**

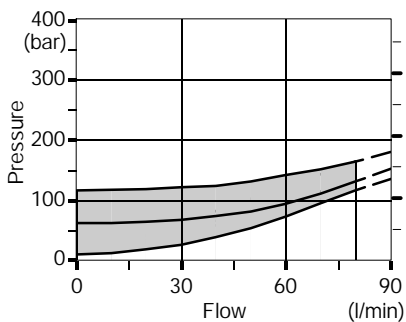
Special body prearranged for port service valves



### Performance data

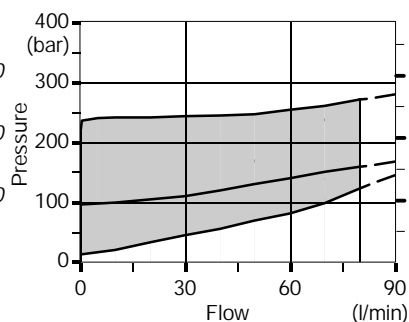
**Spring nr. 2 (green band)**

\*Standard setting: 63 bar - 900 psi



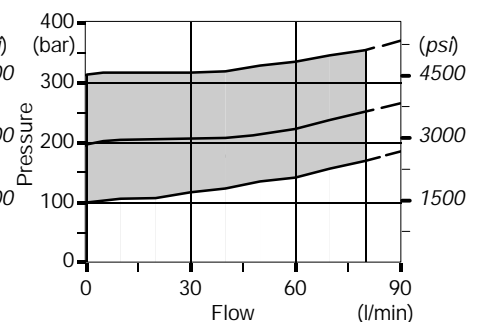
**Spring nr. 3 (blue band)**

\*Standard setting: 100 bar - 1450 psi



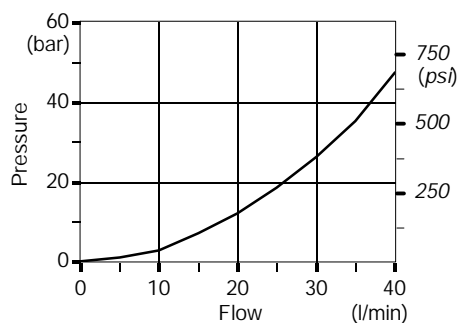
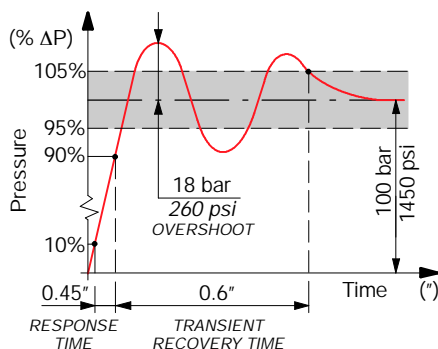
**Spring nr. 4 (red band)**

\*Standard setting: 200 bar - 2900 psi



**Response time**

**Pressure drop**

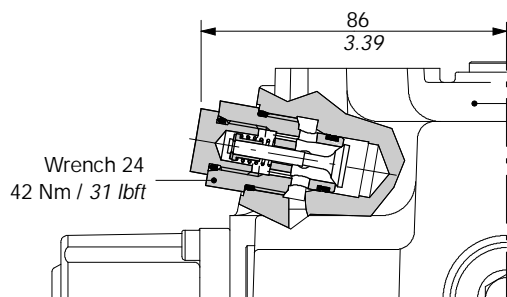


NOTE (\*) - Standard setting is referred to 10 l/min flow.

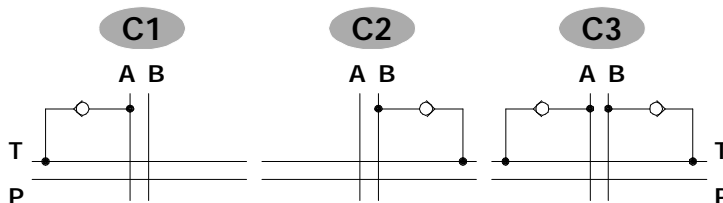
### Anticavitation valve

**C 1**

- 1 mounted on A port.
- 2 mounted on B port.
- 3 mounted on A and B ports.

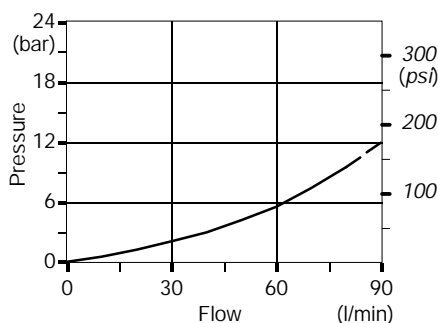


Special body prearranged for port service valves



### Performance data

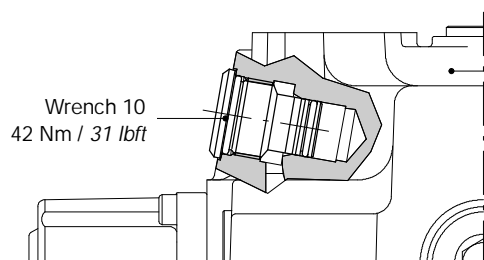
#### Pressure drop



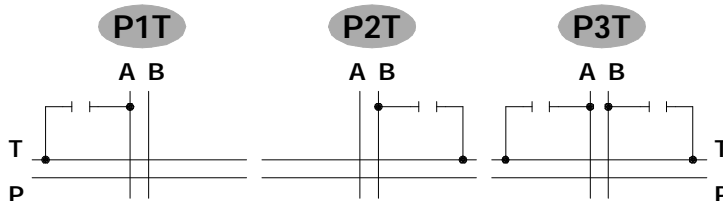
### Port relief valve blanking plug

**P 1 T**

- 1 mounted on A port.
- 2 mounted on B port.
- 3 mounted on A and B ports.



Special body prearranged for port service valves



# SDM140

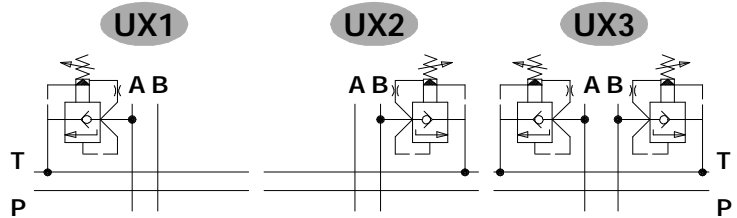
## Port relief options

### Pilot operated pressure valve

The UX cartridge valve cavity is different from the P, U and C valves cavity

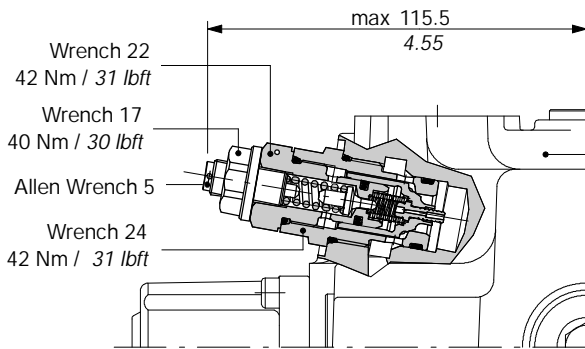
#### UX 1 ( G - 145 )

- Pressure setting in bar
- Adjustment screw (G, H)
- 1 mounted on A port.
- 2 mounted on B port.
- 3 mounted on A and B port.



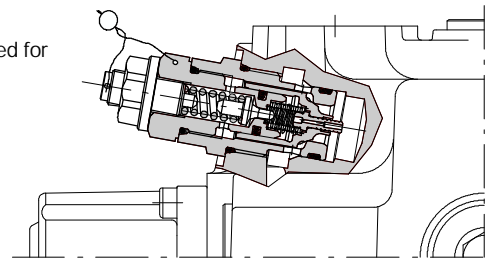
### Adjustment type

**G:** with screw



**H:** valve set and locked

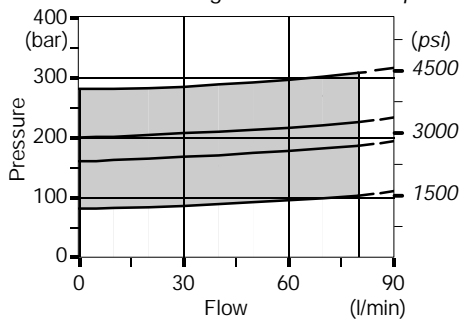
Special body prearranged for port service valves



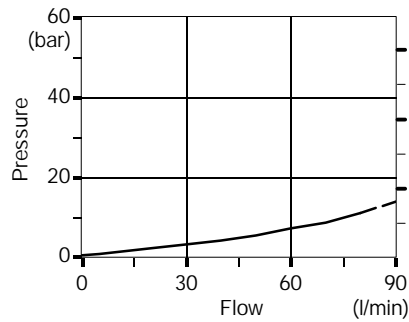
### Performance data

#### Range setting

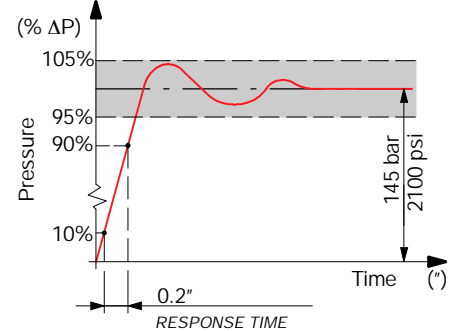
\*Standard setting: 145 bar - 2100 psi



#### Pressure drop



#### Response time



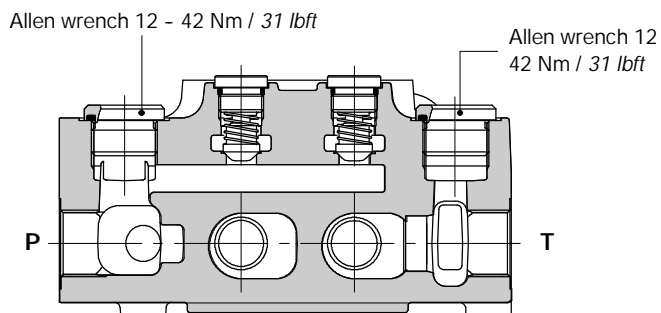
NOTE (\*) - Standard setting is referred to 10 l/min flow.

## Inlet and outlet port options

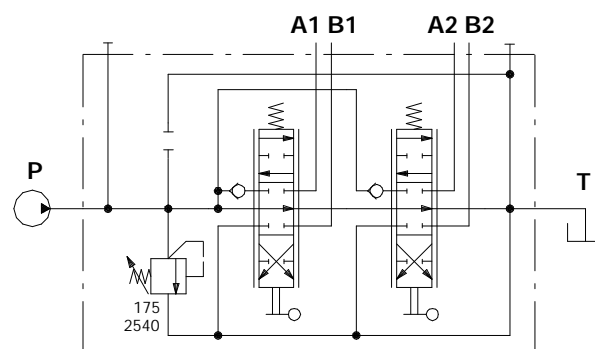
### PSA: upper (standard)

See page 6

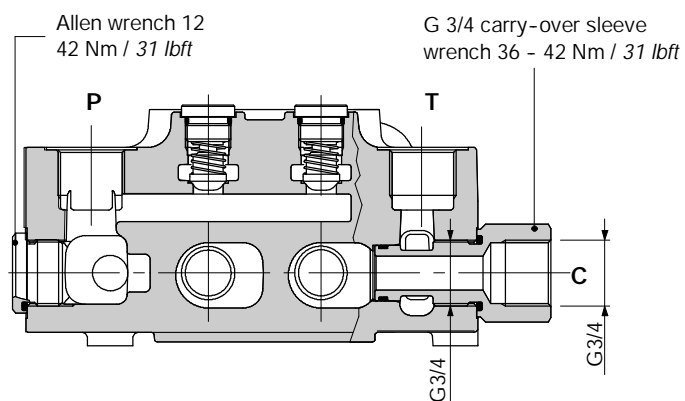
### PSL: side



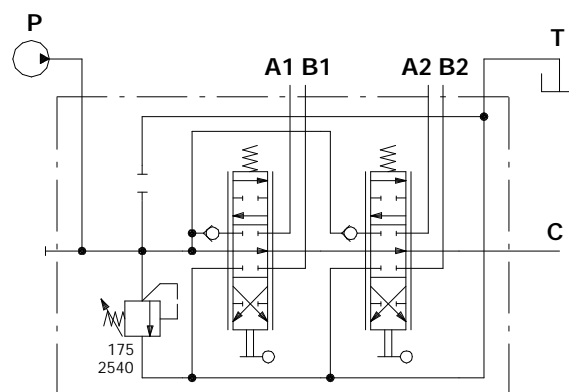
Ex: SDM140/2-P(YG3-175)/18L/18L/PSL



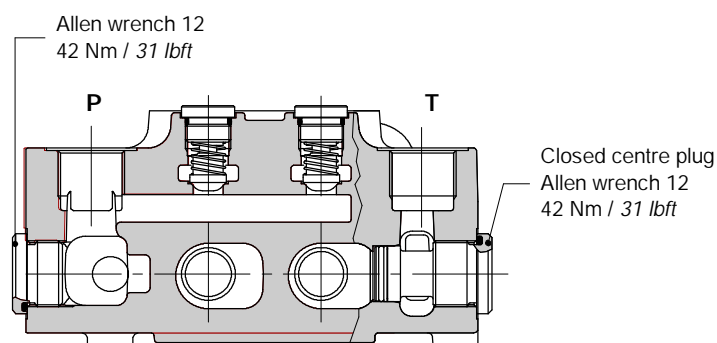
### AE: with carry-over



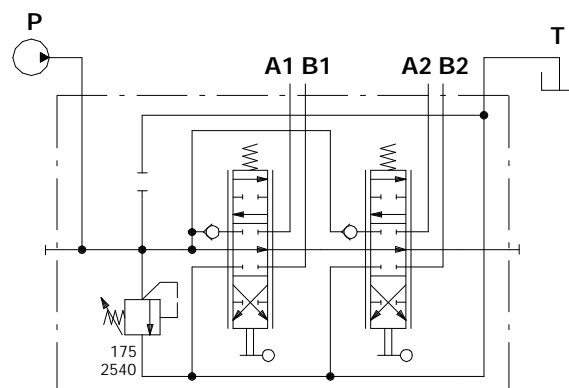
Ex: SDM140/2-P(YG3-175)/18L/18L/AE



### AEK: closed centre



Ex: SDM140/2-P(YG3-175)/18L/18L/AEK



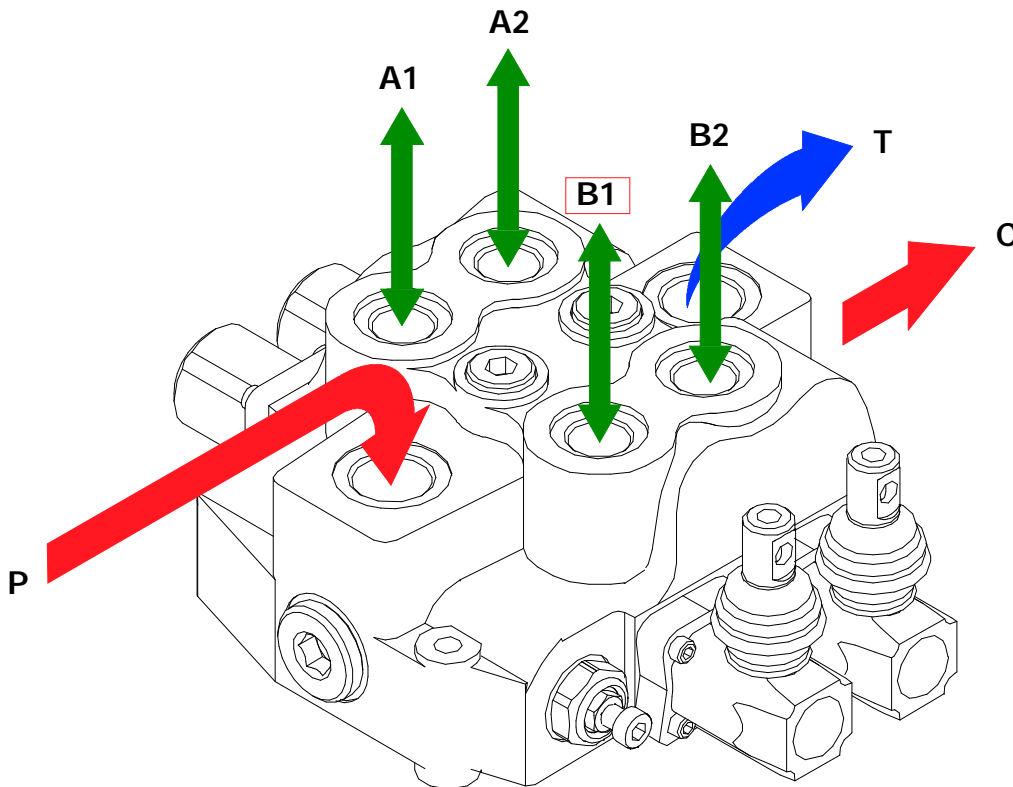
# SDM140

## Installation and maintenance

The SDM140 valve is assembled and tested as per the technical specification of this catalogue.

Before the final installation on your equipment, follow the below recommendations:

- the valve can be assembled in any position, in order to prevent body deformation and spool sticking mount the product on a flat surface;
- in order to prevent the possibility of water entering the lever box and spool control kit, do not use high pressure wash down directly on the valve;
- prior to painting, ensure plastic port plugs are tightly in place.



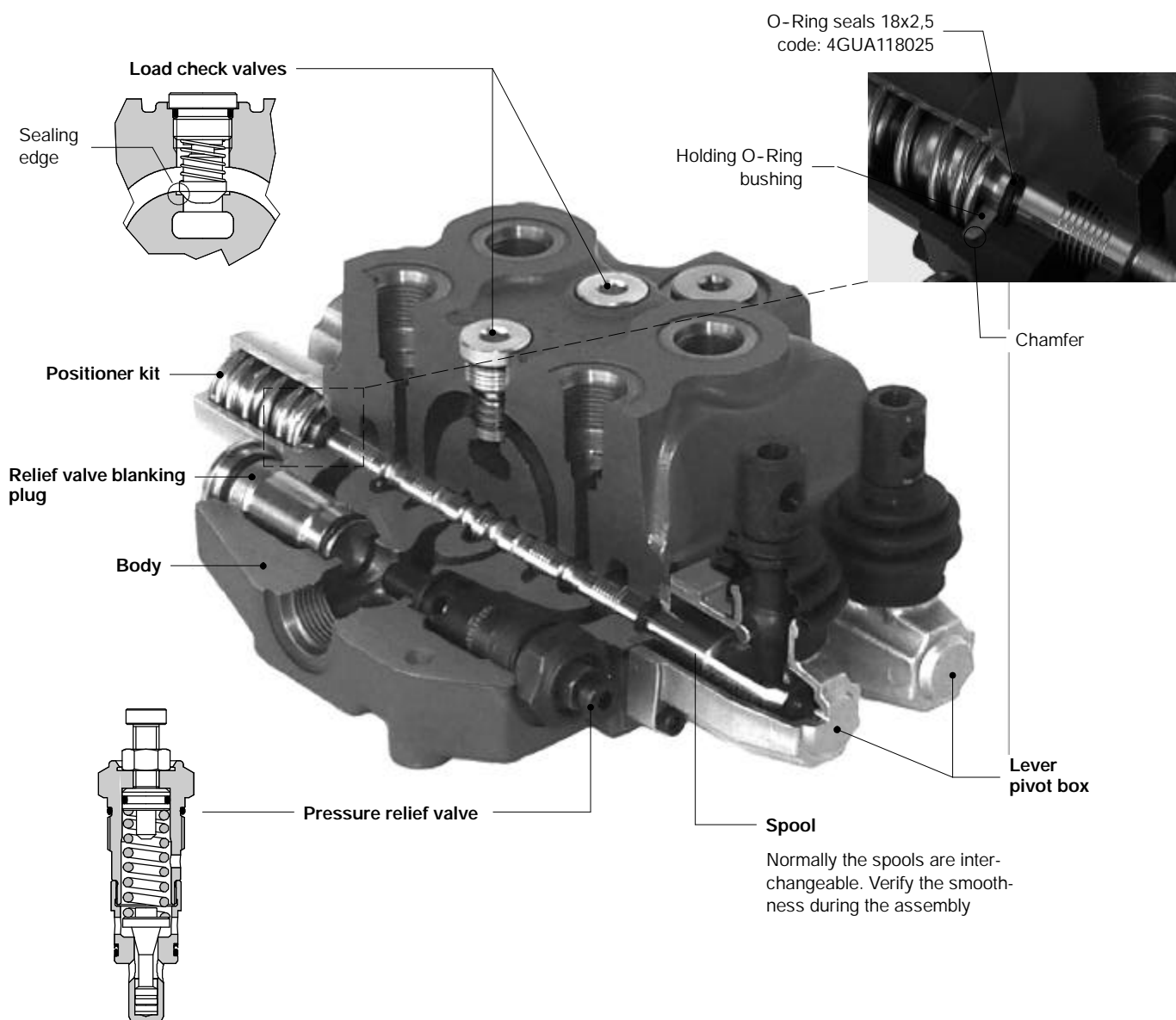
Carry-over configuration

### Fitting tightening torque - Nm / lbft

THREADS TYPE	P and C ports	A and B ports	T port
BSP (ISO 228/1)	G 3/4	G 1/2	G 3/4
With O-Ring seal	70 / 51.6	50 / 36.9	70 / 51.6
With copper washer	70 / 51.6	60 / 44.3	70 / 51.6
With steel and rubber washer	70 / 51.6	60 / 44.3	70 / 51.6
UN-UNF (ISO 11962-1)	1 1/16-12 UN-2B (SAE 12)	7/8-14 UNF-2B (SAE 10)	1 1/16-12 UN-2B (SAE 12)
With O-Ring seal	95 / 70.1	60 / 44.2	95 / 70.1
MET (ISO 6149)	M 27x2	M 22x1.5	M 27x2
With O-Ring seal	100 / 73.8	60 / 44.3	100 / 73.8

NOTE - These torque are recommended. Assembly tightening torque depends on many factors, including lubrication, coating and surface finish. The manufacturer shall be consulted.





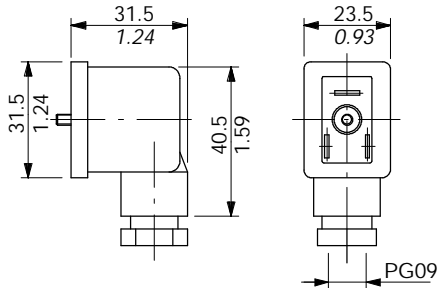
NOTE - All articulated parts inside cap, lever box and mechanical joystick are lubricated with synthetic base grease grade NLGI2

Malfunction	Cause	Remedy
External leakage pivot box lever or control kit side.	Worn spool seal due to mechanical actuation or high back pressure.	Locate the leakage and replace the seal. Check back pressure level.
Excessive internal leakage on A and B ports.	Increase clearance between spools and body due to high wear	Replace the directional control valve and check the oil contamination level.
Dropping load during transition while raising	High leakage on the load check valve.	Remove the load check valve and clean the seat.
Inability to build pressure on A and B ports.	Pressure relief valve blocked open. Low pump pressure and flow.	Remove and clean or replace the valve. Check the pump and circuit.

### Connectors

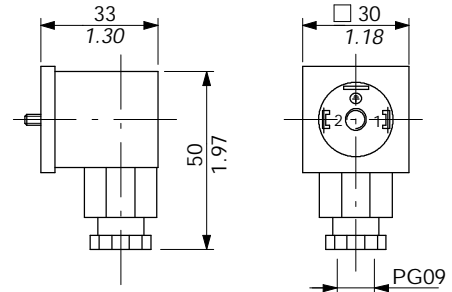
#### Type C01 code: 2X1001020

2P+T, according to DIN43650.



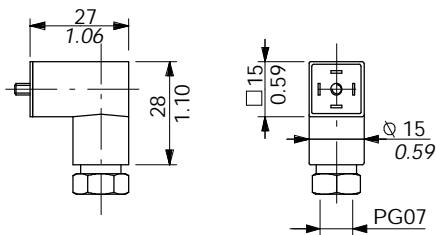
#### Type C02 code: 2X1001010

2P+T according to ISO4400 / DIN43650-A



#### Type C06 code: 5CON002

3P+T according to DIN43650-C



TYPE	Poles	Nominal voltage	Nominal current	Permitted cable section	Weather protection
C01	2P + T	250 VAC / 300 VDC	10 A	1.5 mm <sup>2</sup> / 23x10 <sup>-4</sup> in <sup>2</sup>	IP65
C02	2P + T	250 VAC / 300 VDC	10 A	1.5 mm <sup>2</sup> / 23x10 <sup>-4</sup> in <sup>2</sup>	IP65
C06	3P + T	250 VAC / 300 VDC	6 A	0.75 mm <sup>2</sup> / 11.6x10 <sup>-4</sup> in <sup>2</sup>	IP65

### Note

The SDM140 valve can be supplied with one coat of black paint (**CVN** configuration).  
EX.: SDM140/2-P(YG3-175)/18L/18L/PSA-<CVN>

NOTE - For different colour consult Customer Service.





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